Maintenance and Service Guide

HP Pavilion ze2000 Notebook PC
Compaq Presario M2000 Notebook PC

This guide is a troubleshooting reference used for maintaining and servicing the notebook. It provides comprehensive information on identifying notebook features, components, and spare parts; troubleshooting notebook problems; and performing notebook disassembly procedures.

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1

Product Description

The HP Pavilion ze2000 Notebook PC ❶ and the
Compaq Presario M2000 Notebook PC ❷ offer advanced
modularity, Intel® Mobile Pentium® M and Celeron®
processors, and extensive multimedia support.
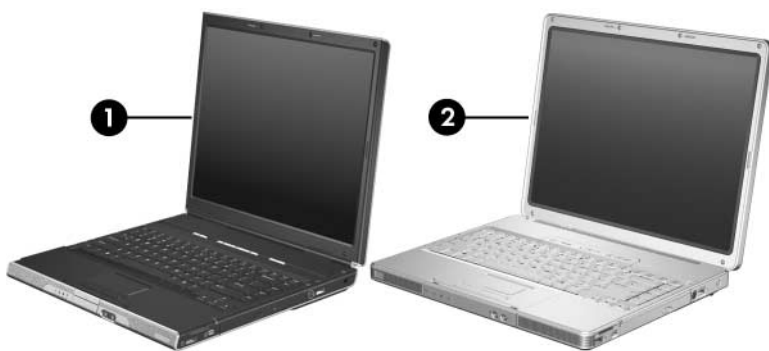
HP Pavilion ze2000 and Compaq Presario M2000

1.1 **Features**

✎ Numerous references are made throughout this *Maintenance and Service Guide* to "full-featured" and "defeatured" notebook models. A model is considered to be full-featured if it has 3 Universal Serial Bus ports and the following components:

- S-Video-out jack
- Expansion port 2
- 6-in-1 Digital Media Reader slot or 6-in-1 Memory Reader slot

A notebook model is considered to be defeatured if it has only 2 Universal Serial Bus ports and none of the components in the preceding list.

- The following processors are available, varying by notebook model:
  - ❏ Intel Pentium M 745 (1.8-GHz) with 400-MHz front side bus (FSB)
  - ❏ Intel Pentium M 735 (1.7-GHz) with 400-MHz FSB
  - ❏ Intel Pentium M 725 (1.6-GHz) with 400-MHz FSB
  - ❏ Intel Pentium M 715A (1.5-GHz) with 400-MHz FSB
  - ❏ Intel Celeron M 360 (1.4-GHz) with 400-MHz FSB
  - ❏ Intel Celeron M 350 (1.3-GHz) with 400-MHz FSB

✎ Full-featured models feature both Intel Pentium M and Celeron M processors. Defeatured models feature only Celeron M processors.

- 15.0-inch XGA (1024 × 768) TFT display with over 16.7 million colors
- 80-, 60-, or 40-GB high-capacity hard drive, varying by notebook model

- 256-MB DDR2 synchronous DRAM (SDRAM) at 400 MHz, expandable to 1.0 GB

- Microsoft® Windows® XP Home Edition or Windows XP Professional, varying by notebook model

- Full-size Windows keyboard with embedded numeric keypad

- TouchPad pointing device with on button and dedicated vertical scroll region

- Integrated 10Base-T/100 Base-TX Ethernet local area network (LAN) network interface card (NIC) with RJ-45 jack

- Integrated high-speed 56K modem with RJ-11 jack

- Integrated wireless support for Mini PCI IEEE 802.11b and 802.11b/g WLAN device

- Support for one Type II PC Card slot, with support for both 32-bit (CardBus) and 16-bit PC Cards

- External 65-watt AC adapter with 3-wire power cord

- 6-cell or 12-cell Li-Ion battery pack

- Stereo speakers with volume up and down buttons

- Support for the following optical drives:
  - ❏ 8X DVD-ROM Drive
  - ❏ 24X DVD/CD-RW Combo Drive
  - ❏ 8X DVD±RW/R and CD-RW Combo Drive
  - ❏ 24X CD-ROM Drive (Compaq Presario M2000 notebooks only)

- Connectors:
  - ❏ External monitor port
  - ❏ Universal Serial Bus (USB) v. 2.0 (up to 3 ports)
  - ❏ RJ-11 (modem) jack
  - ❏ RJ-45 (network) jack
  - ❏ Audio-out (headphone) jack

❏ Audio-in (microphone) jack

❏ Power

❏ IEEE 1394 digital port

❏ S-Video-out jack (select models only)

❏ Expansion port 2

❏ 6-in-1 Digital Media Reader slot (select models only)

❏ 6-in-1 Memory Reader slot (select models only)

1.2 Resetting the Notebook

If the notebook you are servicing has an unknown password, follow these steps to clear the password. These steps also clear CMOS:

1. Prepare the notebook for disassembly (refer to Section 5.3, "Preparing the Notebook for Disassembly," for more information).

2. Remove the real time clock (RTC) battery (refer to Section 5.21, "System Board," for more information).

3. Wait approximately 5 minutes.

4. Replace the RTC battery and reassemble the notebook.

5. Connect AC power to the notebook. Do not reinsert any battery packs at this time.

6. Turn on the notebook.

All passwords and all CMOS settings have been cleared.

1.3 **Power Management**

The notebook comes with power management features that
extend battery operating time and conserve power. The
notebook supports the following power management features:

■ Standby

■ Hibernation

■ Setting customization by the user

■ Hotkeys for setting the level of performance

■ Battery calibration

■ Lid switch standby/resume

■ Power/standby button

■ Advanced Configuration and Power Management (ACPM)
compliance

1.4 **External Components**

The external components on the front of the HP Pavilion ze2000
notebook are shown below and described in Table 1-1.
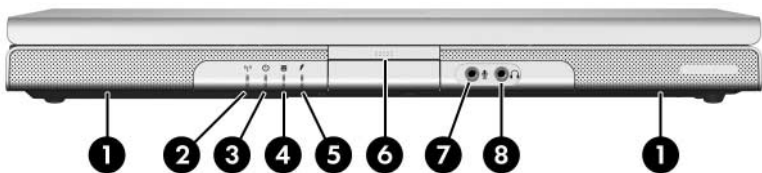
Front Components, HP Pavilion ze2000

Table 1-1

Front Components

HP Pavilion ze2000

Item	Component	Function
1	Speakers (2)	Produce stereo sound.
2	Wireless light (select models only)	On: One or more optional internal wireless devices, such as a WLAN and/or a Bluetooth® device (select models only), are turned on.
3	Power/standby light	■ On: Notebook is turned on. ■ Blinking: Notebook is in standby. ■ Off: Notebook is off.
4	IDE (Integrated Drive Electronics) drive light	On or blinking: The internal hard drive or an optical drive is being accessed.
5	Battery light	■ On: The battery pack is charging. ■ Blinking: The battery pack has reached a low-battery condition. ■ Off: The battery pack is fully charged or not inserted.
6	Display release button	Opens the notebook.
7	Audio-in (microphone) jack	Connects an optional monaural (single sound channel) microphone.
8	Audio-out (headphone) jack	Connects optional headphones or powered stereo speakers. Also connects the audio function of an audio/video device such as a television or VCR.

The external components on the front of the Compaq Presario M2000 notebook are shown below and described in Table 1-2.
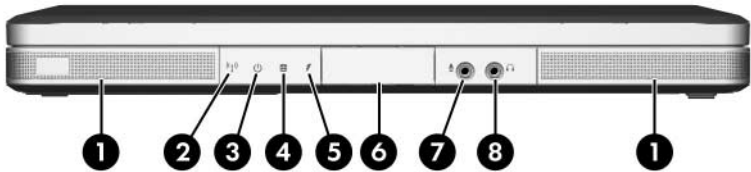
Front Components, Compaq Presario M2000

Table 1-2

Front Components

Compaq Presario M2000

Item	Component	Function
1	Speakers (2)	Produce stereo sound.
2	Wireless light (select models only)	On: One or more optional internal wireless devices, such as a WLAN and/or a Bluetooth device (select models only), are turned on.
3	Power/standby light	■ On: Notebook is turned on. ■ Blinking: Notebook is in standby. ■ Off: Notebook is off.
4	IDE (Integrated Drive Electronics) drive light	On or blinking: The internal hard drive or an optical drive is being accessed.
5	Battery light	■ On: The battery pack is charging. ■ Blinking: The battery pack has reached a low-battery condition. ■ Off: The battery pack is fully charged or not inserted.
6	Display release button	Opens the notebook.
7	Audio-in (microphone) jack	Connects an optional monaural (single sound channel) microphone.
8	Audio-out (headphone) jack	Connects optional headphones or powered stereo speakers. Also connects the audio function of an audio/video device such as a television or VCR.

The external components on the right side of the HP Pavilion ze2000 notebook are shown below and described in Table 1-3.

Right-Side Components, HP Pavilion ze2000

Table 1-3

Right-Side Components

HP Pavilion ze2000

Item	Component	Function
1	USB ports (1 or 2 depending on the notebook model)	Connect an optional USB device.
2	6-in-1 Digital Media Reader slot (select models only)	Supports an optional digital memory card.
3	1394 port (select models only)	Connects an optional 1394a device such as a scanner, digital camera, or digital camcorder.
4	6-in-1 Digital Media Reader light (select models only)	On: A digital memory card is being accessed.
5	Optical drive	Supports an optical disc.
6	S-Video-out jack (select models only)	Connects an optional S-Video device, such as a television, VCR, camcorder, projector, or video capture card.
7	Security cable slot	Attaches an optional security cable to the notebook. ⚠ Security solutions are designed to act as deterrents. These deterrents may not prevent a product from being mishandled or stolen.

The external components on the right side of the Compaq Presario M2000 notebook are shown below and described in Table 1-4.
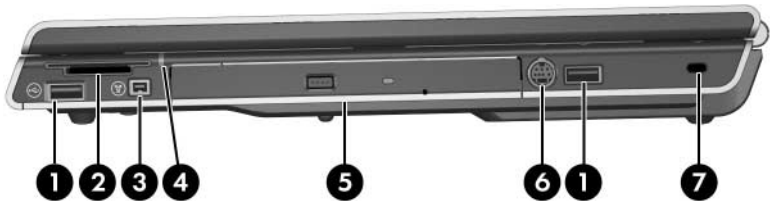

Right-Side Components, Compaq Presario M2000

Table 1-4

Right-Side Components

Compaq Presario M2000

Item	Component	Function
1	USB connectors (1 or 2 depending on the notebook model)	Connect optional USB devices.
2	6-in-1 Memory Reader slot (select models only)	Supports an optional digital memory card.
3	1394 port (select models only)	Connects an optional 1394a device such as a scanner, digital camera, or digital camcorder.
4	6-in-1 Memory Reader light (select models only)	On: A digital memory card is being accessed.
5	Optical drive	Supports an optical disc.
6	S-Video-out jack (select models only)	Connects an optional S-Video device, such as a television, VCR, camcorder, projector, or video capture card.
7	Security cable slot	Attaches an optional security cable to the notebook. ⚠ Security solutions are designed to act as deterrents. These deterrents may not prevent a product from being mishandled or stolen.

The external components on the left side of the HP Pavilion
ze2000 notebook are shown below and described in Table 1-5.

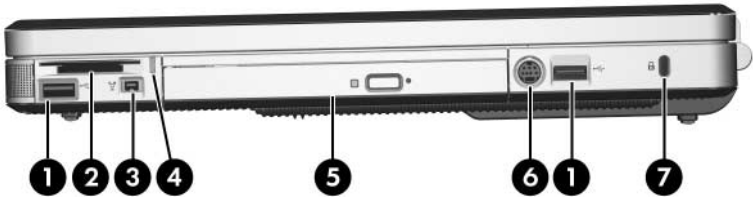*Left-Side Components, HP Pavilion ze2000*

Table 1-5

Left-Side Components

HP Pavilion ze2000

Item	Component	Function
1	Power connector	Connects an AC adapter cable.
2	Monitor port	Connects an optional VGA monitor or projector.
3	Expansion port 2* (select models only)	Connects the notebook to an optional docking device.
4	RJ-45 jack	Connects an optional network cable.
5	RJ-11 jack	Connects the modem cable.
6	USB port	Connects an optional USB device.
7	PC Card slot	Supports an optional Type I or Type II 32-bit (CardBus) or 16-bit PC Card.
8	PC Card eject button	Ejects an optional PC Card from the PC Card slot.

*The notebook has only one expansion port. The term *expansion port 2* describes the type of expansion port.

The external components on the left side of the Compaq Presario M2000 notebook are shown below and described in Table 1-6.

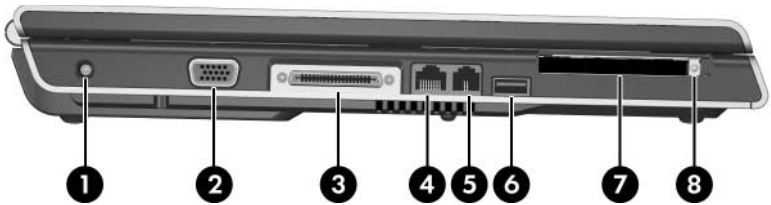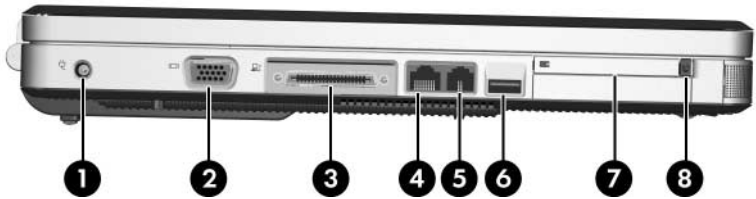*Left-Side Components, Compaq Presario M2000*

Table 1-6

Left-Side Components

Compaq Presario M2000

Item	Component	Function
1	Power connector	Connects an AC adapter cable.
2	Monitor port	Connects an optional VGA monitor or projector.
3	Expansion port 2* (select models only)	Connects the notebook to an optional docking device.
4	RJ-45 (network) jack	Connects an optional network cable.
5	RJ-11 (modem) jack	Connects the modem cable.
6	USB port	Connects an optional USB device.
7	PC Card slot	Supports an optional Type I or Type II 32-bit (CardBus) or 16-bit PC Card.
8	PC Card eject button	Ejects an optional PC Card from the PC Card slot.

*The notebook has only one expansion port. The term *expansion port 2* describes the type of expansion port.

The external components on the rear panel of the HP Pavilion ze2000 notebook are shown below and described in Table 1-7.
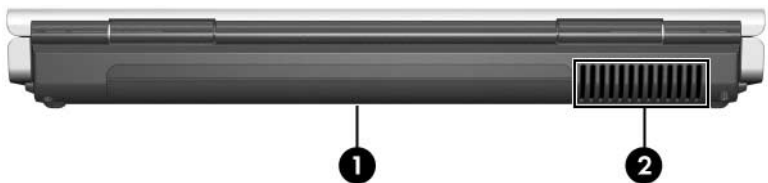
Rear Panel Components, HP Pavilion ze2000

Table 1-7

Rear Panel Components

HP Pavilion ze2000

Item	Component	Function
1	Battery bay	Holds a battery pack.
2	Exhaust vent	Provides airflow to cool internal components.
		△ To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow.

The external components on the rear panel of the Compaq
Presario M2000 notebook are shown below and described
in Table 1-8.
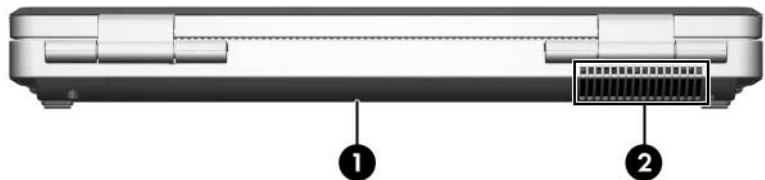
Rear Panel Components, Compaq Presario M2000

Table 1-8

Rear Panel Components

Compaq Presario M2000

Item	Component	Function
1	Battery bay	Holds a battery pack.
2	Exhaust vent	Provides airflow to cool internal components.
		△ To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow.

The notebook keyboard components on the HP Pavilion ze2000 notebook are shown below and described in Table 1-9.
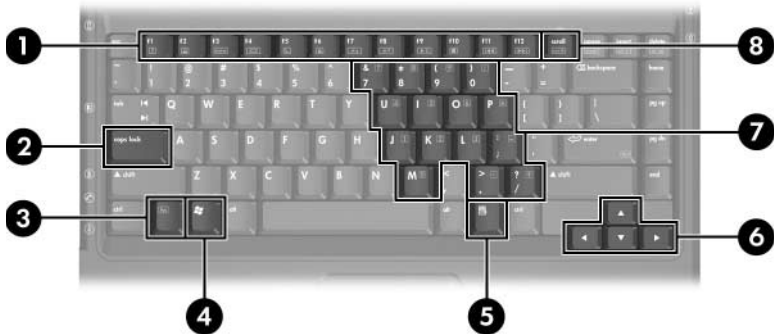
Keyboard Components, HP Pavilion ze2000

Table 1-9

Keyboard Components

HP Pavilion ze2000

Item	Component	Function
1	Function key (12)	Perform system and application tasks. When combined with the **fn** key, several keys perform additional tasks as hotkeys.
2	**caps lock** key	Enables caps lock and turns on the caps lock light.
3	**fn** key	Combines with other keys to perform system tasks. For example, pressing **fn+f7** decreases screen brightness.
4	Windows logo key	Displays the Windows Start menu.
5	Windows applications key	Displays a shortcut menu for items beneath the pointer.
6	Arrow keys	Moves the cursor around the screen.
7	Keypad keys (15)	Can be used like the keys on an external numeric keypad.
8	**num lock** key	On: Num lock or the embedded numeric keypad is on.

The notebook keyboard components on the Compaq Presario M2000 notebook are shown below and described in Table 1-10.
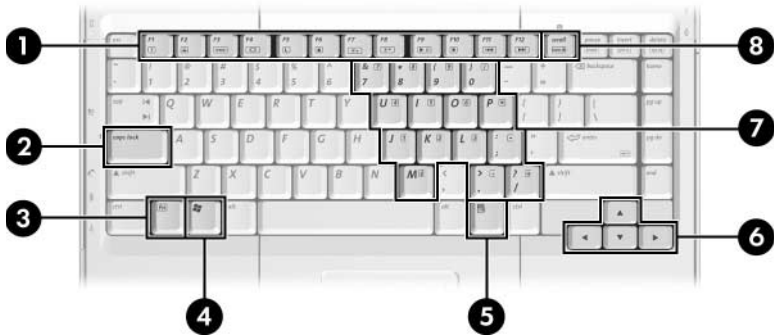
Keyboard Components, Compaq Presario M2000

Table 1-10

Keyboard Components

Compaq Presario M2000

Item	Component	Function
1	Function keys (12)	Perform system and application tasks. When combined with the **Fn** key, the function keys perform additional tasks as hotkeys.
2	**caps lock** key	Enables caps lock and turns on the caps lock light.
3	**Fn** key	Combines with other keys to perform system tasks. For example, pressing **Fn+F7** decreases screen brightness.
4	Windows logo key	Displays the Windows Start menu.
5	Windows applications key	Displays a shortcut menu for items beneath the pointer.
6	Arrow keys	Move the cursor around the screen.
7	Keypad keys (15)	Can be used like the keys on an external numeric keypad.
8	**num lock** key	Enables numeric lock, turns on the embedded numeric keypad, and turns on the num lock light.

The notebook top components on the HP Pavilion ze2000 notebook are shown below and described in Table 1-11.

Top Components, HP Pavilion ze2000

Table 1-11

Top Components

HP Pavilion ze2000

Item	Component	Function
1	Left and right TouchPad buttons	Function like the left and right buttons on an external mouse.
2	TouchPad	Moves the pointer.
3	Caps lock light	On: Caps lock is on.
4	Display switch	If the notebook is closed while on, initiates standby.

Table 1-11

Top Components

HP Pavilion ze2000 *(Continued)*

Item	Component	Function
5	Power/standby button	When the notebook is ■ Off, press to turn on the notebook. ■ On, briefly press to initiate hibernation. ■ In standby, briefly press to resume from standby. ■ In hibernation, briefly press to restore from hibernation. ✎ If the system has stopped responding and Windows shutdown procedures cannot be used, press and hold for at least 4 seconds to turn off the notebook.
6	Volume down button	Decreases system volume.
7	Volume mute button Mute light	Mutes or restores volume. On: Volume is muted.
8	Volume up button	Increases system volume.
9	Wireless button (select models only)	Turns the wireless functionality on or off but does not create a wireless connection. ✎ To establish a wireless connection, a wireless network must already be set up.
10	Num lock light	On: Num lock or the embedded keypad is on.
11	6-in-1 Digital Media Reader light (select models only)	On: A digital memory card is being accessed.
12	TouchPad vertical scrolling region	Scrolls upward or downward.

The top components on the Compaq Presario M2000 notebook are shown below and described in Table 1-12.

Top Components, Compaq Presario M2000

Table 1-12

Top Components

Compaq Presario M2000

Item	Component	Function
1	Left and right TouchPad buttons	Function like the left and right buttons on an external mouse.
2	TouchPad	Moves the pointer.
3	Caps lock light	On: Caps lock is on.
4	Display switch	If the notebook is closed while on, initiates standby.

Table 1-12

Top Components

Compaq Presario M2000 *(Continued)*

Item	Component	Function
5	Wireless light (available on select models)	On: One or more optional internal wireless devices, such as a WLAN and/or a Bluetooth® device (select models only), are turned on.
6	Power/standby button	When the notebook is ■ Off, press to turn on the notebook. ■ On, briefly press to initiate hibernation. ■ In standby, briefly press to resume from standby. ■ In hibernation, briefly press to restore from hibernation. ✎ If the system has stopped responding and Windows shutdown procedures cannot be used, press and hold for at least 4 seconds to turn off the notebook.
7	Volume down button	Decreases system volume.
8	Volume up button	Increases system volume.
9	Volume mute button Mute light	Mutes or restores volume. On: Volume is muted.
10	Num lock light	On: Num lock or the embedded keypad is on.
11	6-in-1 Memory Reader light (select models only)	On: A digital memory card is being accessed.
12	TouchPad vertical and horizontal scroll regions	Scroll upward or downward and left or right.

The external components on the bottom of the HP Pavilion ze2000 notebook are shown below and described in Table 1-13.

Bottom Components, HP Pavilion ze2000

Table 1-13
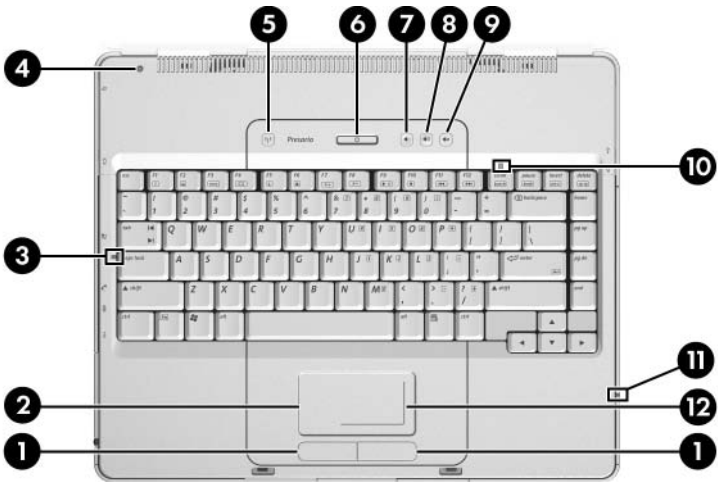
Bottom Components

HP Pavilion ze2000

Item	Component	Function
1	Battery bay	Holds a battery pack.
2	Battery pack release latch	Releases a battery pack from the battery bay.
3	Memory module compartment	Contains two memory slots that support replaceable memory modules. The number of preinstalled memory modules varies by notebook model.

Table 1-13

Bottom Components

HP Pavilion ze2000 *(Continued)*

Item	Component	Function
4	Exhaust vents (4)	Provide airflow to cool internal components.
		△ To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow.
5	Optical drive	Supports an optical disc.
6	Label area	Contains the notebook serial number and other applicable regulatory labels.
7	Mini PCI compartment	Holds an optional wireless LAN device.
		△ To prevent an unresponsive system and the display of a warning message, install only a Mini PCI device authorized for use in your notebook by the governmental agency that regulates wireless devices in your country. If you install a device and then receive a warning message, remove the device to restore notebook functionality. Then contact Customer Care.
8	Hard drive bay	Holds the internal hard drive.

The external components on the bottom of the Compaq Presario M2000 notebook are shown below and described in Table 1-14.
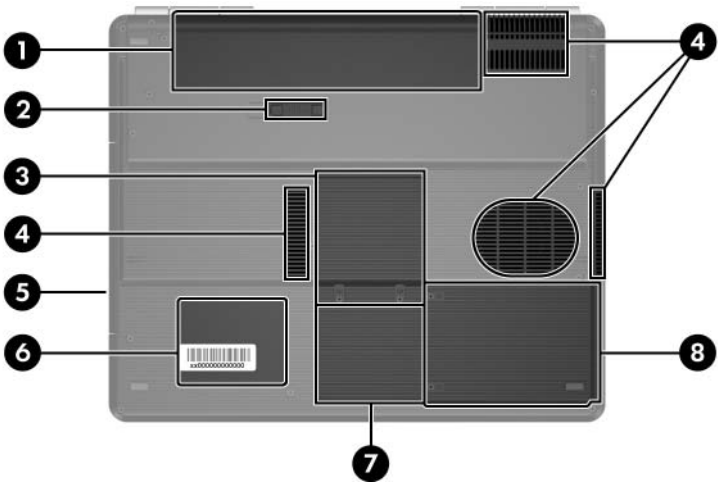
Bottom Components, Compaq Presario M2000
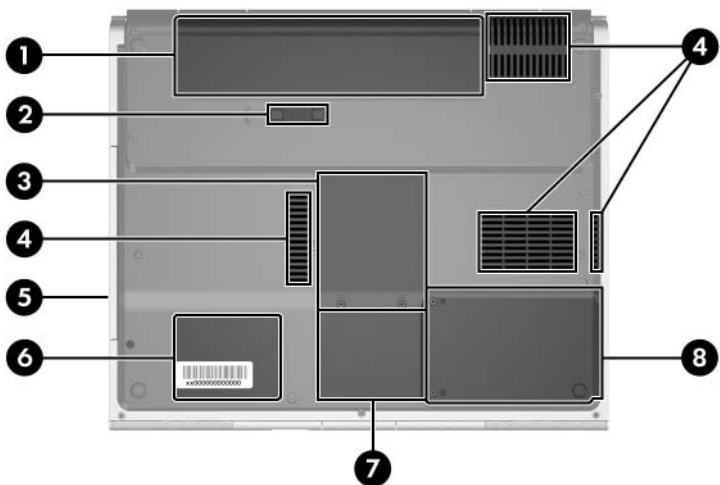
Table 1-14

Bottom Components

Compaq Presario M2000

Item	Component	Function
1	Battery bay	Holds a battery pack.
2	Battery pack release latch	Releases a battery pack from the battery bay.
3	Memory module compartment	Contains two memory slots that support replaceable memory modules. The number of preinstalled memory modules varies by notebook model.

Table 1-14

Bottom Components

Compaq Presario M2000 *(Continued)*

Item	Component	Function
4	Exhaust vents (4)	Provide airflow to cool internal components.
		△ To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow.
5	Optical drive	Supports an optical disc.
6	Label area	Contains the notebook serial number and other applicable regulatory labels.
7	Mini PCI compartment	Holds an optional wireless LAN device.
		△ To prevent an unresponsive system and the display of a warning message, install only a Mini PCI device authorized for use in your notebook by the governmental agency that regulates wireless devices in your country. If you install a device and then receive a warning message, remove the device to restore notebook functionality. Then contact Customer Care.
8	Hard drive bay	Holds the internal hard drive.

1.5 **Design Overview**

This section presents a design overview of key parts and features of the notebook. Refer to Chapter 3, "Illustrated Parts Catalog," to identify replacement parts, and Chapter 5, "Removal and Replacement Procedures," for disassembly steps.

The system board provides the following device connections:

■ Memory module

■ Mini PCI communications devices

■ Hard drive

■ Display

■ Keyboard and TouchPad

■ Audio

■ Intel Pentium M and Celeron M processors

■ Fan

■ PC Card

⚠ **CAUTION:** To properly ventilate the notebook, allow at least a 7.6-cm (3-inch) clearance on the left and right sides of the notebook.

The notebook uses an electric fan for ventilation. The fan is controlled by a temperature sensor and is designed to be turned on automatically when high temperature conditions exist. These conditions are affected by high external temperatures, system power consumption, power management/battery conservation configurations, battery fast charging, and software applications. Exhaust air is displaced through the ventilation grill located on the left side of the notebook.

2

Troubleshooting

⚠ **WARNING:** Only authorized technicians trained by HP should repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly-/module-level repair. Because of the complexity of the individual boards and subassemblies, do not attempt to make repairs at the component level or modifications to any printed wiring board. Improper repairs can create a safety hazard. Any indication of component replacement or printed wiring board modification may void any warranty or exchange allowances.

2.1 Computer Setup

Computer Setup is a system information and customization utility that can be used even when the operating system is not working or will not load. This utility includes settings that are not available in Windows.

Using Computer Setup

Information and settings in Computer Setup are accessed from the Main, Security, Advanced, or Tools menus:

1. Turn on or restart the notebook. Press **f10** while the F10 = ROM-Based Setup message is displayed in the lower-left corner of the screen.

   ❏ To change the language, use the cursor control keys to navigate to the **Advanced** menu.

   ❏ To view navigation information, press **f1**.

   ❏ To return to the Computer Setup menu, press **esc**.

2. Select the **Main, Security, Advanced,** or **Tools** menu.

3. To close Computer Setup and restart the notebook:

   ❏ Select **Exit > Exit Saving Changes,** and then press **enter**.

   – or –

   ❏ Select **Exit > Exit Discarding Changes,** and then press **enter**.

   – or –

   ❏ Select **Exit > Load Setup Defaults,** and then press **enter**.

4. When you are prompted to confirm your action, press **f10**.

Selecting from the Main Menu

Table 2-1

Main Menu

Select	To Do This
System Information	■ Change the system time and system date.
	■ View identification information about the notebook.
	■ View specification information about the processor, memory and cache size, and system ROM.

Selecting from the Security Menu

Table 2-2

Security Menu

Select	To Do This
Administrator Password	Enter, change, or delete an Administrator password.
Power-on Password	Enter, change, or delete a power-on password.
DriveLock Passwords	Enable/disable DriveLock; change a DriveLock user or master password. ✎ DriveLock Settings are accessible only when you enter Computer Setup by turning on (not restarting) the notebook.
Password Options (Password options can be selected only when a power-on password has been set.)	Enable/disable: ■ QuickLock ■ QuickLock on standby ■ QuickBlank ✎ To enable QuickLock on standby or QuickBlank, you must first enable QuickLock.
Device Security	Enable/disable: ■ Diskette drive startup* ■ CD-ROM or diskette startup ✎ Settings for a DVD-ROM can be entered in the CD-ROM field.
*Not applicable to SuperDisk LS-120 drives.	

Selecting from the Advanced Menu

Table 2-3

Advanced Menu

Select	To Do This
Language	Change the Computer Setup language.
Boot Order	Enable/disable MultiBoot, which sets a startup sequence that can include most bootable devices and media in the system.
Accessibility Options	Allows electronic and information technology to be accessible to people with varying ranges of abilities.
Video Memory	Displays the amount of video memory available on the notebook.

Selecting from the Tools Menu

Table 2-4

Tools Menu

Select	To Do This
Hard Drive Self Test	Run a quick comprehensive self test on hard drives in the system that support the test features.

2.2 Troubleshooting Flowcharts

Table 2-5

Troubleshooting Flowcharts Overview

Flowchart	Description
2.1	"Flowchart 2.1—Initial Troubleshooting"
2.2	"Flowchart 2.2—No Power, Part 1"
2.3	"Flowchart 2.3—No Power, Part 2"
2.4	"Flowchart 2.4—No Power, Part 3"
2.5	"Flowchart 2.5—No Power, Part 4"
2.6	"Flowchart 2.6—No Video, Part 1"
2.7	"Flowchart 2.7—No Video, Part 2"
2.8	"Flowchart 2.8—Nonfunctioning Docking Device (if applicable)"
2.9	"Flowchart 2.9—No Operating System (OS) Loading"
2.10	"Flowchart 2.10—No OS Loading, Hard Drive, Part 1"
2.11	"Flowchart 2.11—No OS Loading, Hard Drive, Part 2"
2.12	"Flowchart 2.12—No OS Loading, Hard Drive, Part 3"
2.13	"Flowchart 2.13—No OS Loading, Diskette Drive"

Table 2-5

Troubleshooting Flowcharts Overview *(Continued)*

Flowchart	Description
2.14	"Flowchart 2.14—No OS Loading, Optical Drive"
2.15	"Flowchart 2.15—No Audio, Part 1"
2.16	"Flowchart 2.16—No Audio, Part 2"
2.17	"Flowchart 2.17—Nonfunctioning Device"
2.18	"Flowchart 2.18—Nonfunctioning Keyboard"
2.19	"Flowchart 2.19—Nonfunctioning Pointing Device"
2.20	"Flowchart 2.20—No Network/Modem Connection"

Flowchart 2.1—Initial Troubleshooting

```
┌─────────────────┐
│      Begin      │
│ troubleshooting.│
└─────────────────┘
         │
         ▼        N
   ╱ Is there ╲ ──────▶  ┌─────────────────┐
   ╲  power?  ╱          │      Go to      │
         │               │"Flowchart 2.2—No│
         Y               │  Power, Part 1."│
         │               └─────────────────┘
         ▼        N
  ╱  Beeps,   ╲ ──────▶  ┌─────────────────┐
  ╱ LEDs, or   ╲         │      Check      │
  ╲error       ╱         │   LED board,    │
  ╲ messages? ╱          │    speaker      │
         │               │  connections.   │
         Y               └─────────────────┘
         │
         ▼        N
 ╱ Is there video?╲ ──▶  ┌─────────────────┐
 ╲  (no boot)     ╱      │      Go to      │
         │               │"Flowchart 2.6—No│
         Y               │  Video, Part 1."│
         │               └─────────────────┘
         ▼        N
  ╱ Is the OS  ╲ ─────▶  ┌─────────────────┐
  ╲ loading?   ╱         │      Go to      │
         │               │"Flowchart 2.9—No│
         Y               │ Operating System│
         │               │  (OS) Loading." │
         ▼        N       └─────────────────┘
  ╱ Is there  ╲ ──────▶  ┌─────────────────┐
  ╲  sound?   ╱          │      Go to      │
         │               │  "Flowchart     │
         Y               │ 2.15—No Audio,  │
                         │    Part 1."     │
                         └─────────────────┘
```

```
         ▼        N
 ╱ All drives ╲ ──────▶  ┌─────────────────┐
 ╲  working?  ╱          │      Go to      │
         │               │   "Flowchart    │
         Y               │2.17—Nonfunction │
         │               │  ing Device."   │
         ▼        N       └─────────────────┘
 ╱ Keyboard/  ╲ ──────▶  ┌─────────────────┐
 ╱ pointing    ╲         │      Go to      │
 ╲ device      ╱         │   "Flowchart    │
 ╲ working?   ╱          │2.18—Nonfunction │
         │               │ing Keyboard" or │
         Y               │   "Flowchart    │
         │               │2.19—Nonfunction │
         │               │ing Pointing     │
         │               │    Device."     │
         ▼        N       └─────────────────┘
 ╱ Connecting ╲ ──────▶  ┌─────────────────┐
 ╱ to network   ╲        │      Go to      │
 ╲ or modem?   ╱         │   "Flowchart    │
         │               │   2.20—No       │
         Y               │ Network/Modem   │
         │               │  Connection."   │
         ▼               └─────────────────┘
   ┌──────────┐
   │   End    │
   └──────────┘
```

Flowchart 2.2—No Power, Part 1

No power
(power LED
is off).

Remove from
docking device
(if applicable).

N

Power up
on battery
power?

Reset
power.*

N

Power up
on battery
power?

Go to
"Flowchart 2.3—No
Power, Part 2."

Y | **Y**

N

Power up
on AC
power?

Reset
power.*

N

Power up
on AC power?

Go to
"Flowchart 2.4—No
Power, Part 3."

Y | **Y**

Y

Power up in
docking
device?

Done

N

1. Reseat the power cables in the docking
   device and at the AC outlet.
2. Ensure the AC power source is active.
3. Ensure that the power strip is working.

*NOTES
1. On select models, there is a separate
   reset button.
2. On select models, the notebook can be
   reset using the standby switch and
   either the lid switch or the main power
   switch.

Y   **N**

Done

Power up
in docking
device?

Go to
"Flowchart
2.8—Nonfunctioning
Docking Device (if
applicable)."

Flowchart 2.3—No Power, Part 2

```
┌─────────────────┐
│ Continued from  │
│ "Flowchart 2.2—No │
│  Power, Part 1." │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│ Visually check for │
│ debris in battery │
│ socket and clean │
│  if necessary.  │
└─────────────────┘
         │
         ▼        Y
    ◇ Power on? ───────▶ ┌──────────┐
                         │   Done   │
         N               └──────────┘
         │
         ▼
┌─────────────────┐
│ Check battery by │
│  recharging it,  │
│   moving it to   │
│ another notebook,│
│  or replacing it.│
└─────────────────┘
         │
         ▼        N
    ◇ Power on? ───────▶ ┌──────────────┐
                         │   Replace    │
         Y               │ power supply │
         │               │(if applicable)│
         ▼               └──────────────┘
   ┌──────────┐                 │
   │   Done   │                 ▼         N
   └──────────┘            ◇ Power on? ───────▶ ┌──────────────┐
                                                │   Go to      │
                                Y               │"Flowchart 2.4—No │
                                │               │ Power, Part 3." │
                                ▼               └──────────────┘
                           ┌──────────┐
                           │   Done   │
                           └──────────┘
```

Flowchart 2.4—No Power, Part 3

```
Continued from
"Flowchart 2.3—No
Power, Part 2."
        |
        v
Plug directly
into AC outlet.
        |
        v
   Power LED ------Y------> Done
     on?
        |
        N
        v
Reseat AC adapter
in notebook and
at power source.
        |
        v
   Power on? ------Y------> Done
        |
        N
        v
  Power outlet ----N------> Try different
    active?                   outlet.
        |
        Y
        v
   Replace
  power cord.
        |
        v
   Power on? ------Y------> Done
        |
        N
```

```
            External
               |
               v
        Internal or --------> Replace external
        external AC            AC adapter.
         adapter?                  |
            |                      v
        Internal              Power on? ----N----
            v                      |             |
        Go to <----------------    Y            |
   "Flowchart 2.5—No                |            |
    Power, Part 4."                 v            |
                                  Done           |
```

Flowchart 2.5—No Power, Part 4

```
┌──────────────────┐
│  Continued from  │
│ "Flowchart 2.4—No│
│  Power, Part 3." │
└──────────────────┘
         │
         ▼
┌──────────────────┐
│      Open        │
│    notebook.     │
└──────────────────┘
         │
         ▼
      ╱────────╲          Y     ┌──────────────────┐
     ╱ Loose or ╲───────────────▶│  Reseat loose    │
     ╲ damaged  ╱                │ components and   │
      ╲ parts? ╱                 │    boards and    │
       ╲──────╱                  │ replace damaged  │
         │                       │      items.      │
         │ N                     └──────────────────┘
         ▼
┌──────────────────┐
│     Close        │
│  notebook and    │
│     retest.      │
└──────────────────┘
         │
         ▼
      ╱────────╲          N     ┌──────────────────────────────────────────┐
     ╱          ╲───────────────▶│ Replace the following items (if applicable).│
     ╲ Power on?╱                │ Check notebook operation after each         │
      ╲        ╱                 │ replacement:                                │
       ╲──────╱                  │ 1. Internal DC-DC converter*                │
         │                       │ 2. Internal AC adapter                      │
         │ Y                     │ 3. Processor board*                         │
         ▼                       │ 4. System board*                            │
┌──────────────────┐             │                                             │
│      Done        │             │ *NOTE: Replace these items as a set to      │
│                  │             │ prevent shorting out among components.      │
└──────────────────┘             └──────────────────────────────────────────┘
```

Flowchart 2.6—No Video, Part 1

No video.

Stand-alone or docking device?

Docking Device → Go to "Flowchart 2.7—No Video, Part 2."

Stand-alone

*NOTE: To change from internal to external display, use the hotkey combination.

Internal or external display*?

Internal → Adjust brightness.

Video OK? — Y → Done

N

Press lid switch to ensure operation.

Video OK? — Y → Done

N

External → Adjust brightness.

Video OK? — Y → Done

N

Check for bent pins on cable.

A

Replace the following one at a time. Test after each replacement.
1. Cable between notebook and notebook display (if applicable)
2. Display
3. System board

Video OK? — N → Try another display. → Internal and external video OK? — N → Replace system board.

Y

Done

Y

Done

Flowchart 2.7—No Video, Part 2

Continued from
"Flowchart 2.6—No
Video, Part 1."

↓

Remove
notebook from
docking device,
if connected.

↓

Adjust
display
brightness.

↓

N

Video OK? → Go to "A" in
"Flowchart 2.6—No
Video, Part 1."

Y

↓

Check that notebook is properly
seated in docking device,
for bent pins on cable, and for
monitor connection.

↓

Y

Video OK? → Done

N

↓

Adjust external
monitor display.

Check brightness
of external
monitor.

↓

Y

Video OK? → Done

N

↓

Try another
external
monitor.

↓

Y

Internal
and external
video OK? → Done

N

↓

Go to
"Flowchart
2.8—Nonfunctioning
Docking Device (if
applicable)."

Flowchart 2.8—Nonfunctioning Docking Device (if applicable)

```
┌─────────────────┐
│ Nonfunctioning  │
│ docking device. │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│ Reseat power    │
│ cord in docking │
│ device and      │
│ power outlet.   │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│ Check voltage   │
│ setting on      │
│ docking device. │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│ Reset monitor   │
│ cable connector │
│ at docking      │
│ device.         │
└─────────────────┘
         │
         ▼
      ◇ Docking       Y    ┌──────┐
      device  ──────────▶  │ Done │
      operating?           └──────┘
         │ N
         ▼
┌─────────────────┐
│ Remove          │
│ notebook, reseat│
│ all internal    │
│ parts, and      │
│ replace any     │
│ damaged items in│
│ docking device. │
└─────────────────┘
```

```
┌─────────────────┐
│ Reinstall       │
│ notebook into   │
│ docking device. │
└─────────────────┘
         │
         ▼
      ◇ Docking       Y    ┌──────┐
      device  ──────────▶  │ Done │
      operating?           └──────┘
         │ N
         ▼
┌───────────────────────────────────────┐
│ Replace the following docking device   │
│ components one at a time. Check notebook│
│ operation after each replacement.      │
│ 1. Power supply                        │
│ 2. I/O board                           │
│ 3. Backplane board                     │
│ 4. Switch box                          │
│ 5. Docking device motor mechanism      │
└───────────────────────────────────────┘
```

Flowchart 2.9—No Operating System (OS) Loading

No OS loading.*

Reseat power cord in docking device and power outlet.

No OS loading from hard drive, go to "Flowchart 2.10—No OS Loading, Hard Drive, Part 1."

No OS loading from diskette drive, go to "Flowchart 2.13—No OS Loading, Diskette Drive."

No OS loading from CD- or DVD-ROM drive, go to "Flowchart 2.14—No OS Loading, Optical Drive."

No OS loading from network, go to "Flowchart 2.20—No Network/Modem Connection."

*NOTE: Before beginning troubleshooting, always check cable connections, cable ends, and drives for bent or damaged pins.

Flowchart 2.10—No OS Loading, Hard Drive, Part 1

```
OS not
loading from
hard drive.
        │
        ▼
                    Y
Nonsystem ──────────────►   Go to
disk message?               "Flowchart 2.11—No
        │                    OS Loading,
        N                    Hard Drive, Part 2."
        ▼
Reseat
external
hard drive.
        │
        ▼
                    Y
OS loading? ──────────────►  Done
        │
        N
        ▼
                    N
Boot
from ───────────────────┐
CD?                      │
        │                │
        Y                │
        ▼                ▼
Check the Setup          Boot          N   Go to
utility for correct      from ─────────────► "Flowchart
booting order.           diskette?           2.13—No OS
        │                     │               Loading, Diskette
        │                     Y               Drive."
        │ N                   ▼
        ▼                Change boot
Boot ───────────────┐    priority through
from                │    the Setup utility
hard drive?         │    and reboot.
        │           │         │
        Y           │         ▼
        ▼           │    Boot          N   Go to
Done ◄──────────────────from ─────────────► "Flowchart
                         hard drive?         2.17—Nonfunctioning
                              │               Device."
                              Y
```

Flowchart 2.11—No OS Loading, Hard Drive, Part 2

Continued from
"Flowchart 2.10—No
OS Loading,
Hard Drive, Part 1."

N → CD or diskette in drive?
1. Replace hard drive.
2. Replace system board.

Y

Remove diskette and reboot.

Y → Boot from hard drive? → Done

N

N → Boot from diskette drive? → Go to "Flowchart 2.13—No OS Loading, Diskette Drive."

Y

N

Hard drive accessible?

Y

Go to "Flowchart 2.12—No OS Loading, Hard Drive, Part 3."

Reseat hard drive.

Y → Hard drive accessible? → Done

N

Run FDISK.

N → Hard drive partitioned? → Create partition, and then format hard drive to bootable C:\ prompt.

Y

N → Hard drive formatted? → Format hard drive and bring to a bootable C:\ prompt.

Y

Y → Notebook booted? → Done

Load OS using *Operating System* disc (if applicable).

N

Go to "Flowchart 2.12—No OS Loading, Hard Drive, Part 3."

Flowchart 2.12—No OS Loading, Hard Drive, Part 3

Continued from "Flowchart 2.11—No OS Loading, Hard Drive, Part 2."

System files on hard drive?
- N → Install OS and reboot.
- Y ↓

Virus on hard drive?
- Y → Clean virus.
- N ↓

Install OS and reboot. ↓

OS loading from hard drive?
- Y → Done
- N ↓

Clean virus. →

Run SCANDISK and check for bad sectors.

Diagnostics on diskette?
- Y → Replace hard drive.
- N ↓

Can bad sectors be fixed?
- N → Replace hard drive.
- Y ↓

Run diagnostics and follow recommendations.

Fix bad sectors. →

Boot from hard drive?
- N → Replace hard drive.
- Y ↓

Done

Flowchart 2.13—No OS Loading, Diskette Drive

OS not loading from diskette drive. → Reseat diskette drive. → OS loading? **Y** → Done

N

Nonsystem disk message? **Y** → Bootable diskette in drive? **N** → Install bootable diskette and reboot notebook.

N

Y (Bootable diskette in drive?)

Check diskette for system files. Try different diskette.

Boot from another device? **N** → Go to "Flowchart 2.17—Nonfunctioning Device."

Y (Boot from another device?)

Nonsystem disk error? **Y** → 1. Replace diskette drive. 2. Replace system board.

N

Diskette drive enabled in the Setup utility? **N** → Enable drive and cold boot notebook.

Y (Diskette drive enabled)

OS loading? **Y** → Done

N

Is diskette drive boot order correct? **Y** → Reset the notebook. Refer to Section 1.2, "Resetting the Notebook," for instructions.

N (Is diskette drive boot order correct?)

Change boot priority using the Setup utility.

Go to "Flowchart 2.17—Nonfunctioning Device."

Flowchart 2.14—No OS Loading, Optical Drive

No OS loading from CD-ROM or DVD-ROM drive. → Disc in drive? — **Y** → Bootable disc in drive? — **N** → Install bootable disc and reboot notebook.

Disc in drive? — **N** → Install bootable disc.

Bootable disc in drive? — **Y** → Try another bootable disc.

Boots from CD or DVD? — **Y** → Done

Boots from CD or DVD? — **N** → Reseat drive.

Boots from CD or DVD? — **Y** → Done

Boots from CD or DVD? — **N** → Booting from another device?

Booting from another device? — **N** → Go to "Flowchart 2.17—Nonfunctioning Device."

Booting from another device? — **Y** → Booting order correct?

Booting order correct? — **Y** → Reset the notebook. Refer to Section 1.2, "Resetting the Notebook," for instructions. → Go to "Flowchart 2.17—Nonfunctioning Device."

Booting order correct? — **N** → Correct boot order using the Setup utility.

Flowchart 2.15—No Audio, Part 1

```
┌──────────┐     ┌──────────────┐         ◇              Y    ┌──────────┐
│          │     │ Turn up audio│       Audio?  ──────────────▶│          │
│ No audio.│ ───▶│ internally or│ ───▶  ◇                     │   Done   │
│          │     │  externally. │         │                   │          │
└──────────┘     └──────────────┘         │ N                 └──────────┘
```

```
        Y                                  N          ┌──────────────┐
     ◇                ┌──────────┐      ◇             │   Go to      │
  Notebook in         │          │   Internal         │ "Flowchart   │
  docking device ────▶│  Undock  │──▶ audio?  ───────▶│ 2.16—No Audio│
  (if applicable)?    │          │   ◇                │   Part 2."   │
     ◇                └──────────┘      │ Y            └──────────────┘
      │ N                               │
┌──────────────┐              ┌────────────────────────────────────────┐
│   Go to      │              │ Replace the following docking device   │
│ "Flowchart   │              │ components one at a time, as applicable.│
│ 2.16—No Audio│              │ Check audio status after each change.   │
│   Part 2."   │              │ 1. Reseat docking device audio cable.   │
└──────────────┘              │ 2. Replace audio cable.                 │
                              │ 3. Replace speaker.                     │
                              │ 4. Replace docking device audio board.  │
                              │ 5. Replace backplane board.             │
                              │ 6. Replace I/O board.                   │
                              └────────────────────────────────────────┘
```

```
┌──────────────────┐              ◇              Y    ┌──────────┐
│     Go to        │           Audio?  ───────────────▶│          │
│  "Flowchart      │◀────────  ◇                       │   Done   │
│ 2.17—Nonfunction.│              │                    │          │
│    Device."      │              │ N                  └──────────┘
└──────────────────┘
```

Flowchart 2.16—No Audio, Part 2

Flowchart 2.17—Nonfunctioning Device

```
          ┌─────────────────┐
          │  Nonfunctioning │
          │     device.     │
          └─────────────────┘
                   │
                   ▼
          ┌─────────────────┐
          │     Reseat      │
          │     device.     │
          └─────────────────┘
                   │
                   ▼
   ┌───────────────────────────────────────┐
   │ Unplug the nonfunctioning device from  │
   │ the notebook and inspect cables and    │
   │ plugs for bent or broken pins          │
   │          or other damage.              │
   └───────────────────────────────────────┘
                   │
                   ▼
```

Any physical device detected? — Y → Fix or replace broken item. → Go to "Flowchart 2.9—No Operating System (OS) Loading."

N → Clear CMOS. → Reattach device. Close notebook, plug in power, and reboot. → Device boots properly?

Device boots properly? — N → Replace hard drive. / Replace NIC. If integrated NIC, replace system board. / Replace diskette drive. → Device boots properly?

Device boots properly? — Y → Done

Device boots properly? — N → Go to "Flowchart 2.9—No Operating System (OS) Loading."

Device boots properly? — Y → Done

Flowchart 2.18—Nonfunctioning Keyboard

Flowchart 2.19—Nonfunctioning Pointing Device

Flowchart 2.20—No Network/Modem Connection

3

Illustrated Parts Catalog

This chapter provides an illustrated parts breakdown and a reference for spare part numbers and option part numbers.

3.1 Serial Number Location

When ordering parts or requesting information, provide the notebook serial number and model number located on the bottom of the notebook.

Serial Number Location

3.2 Notebook Major Components
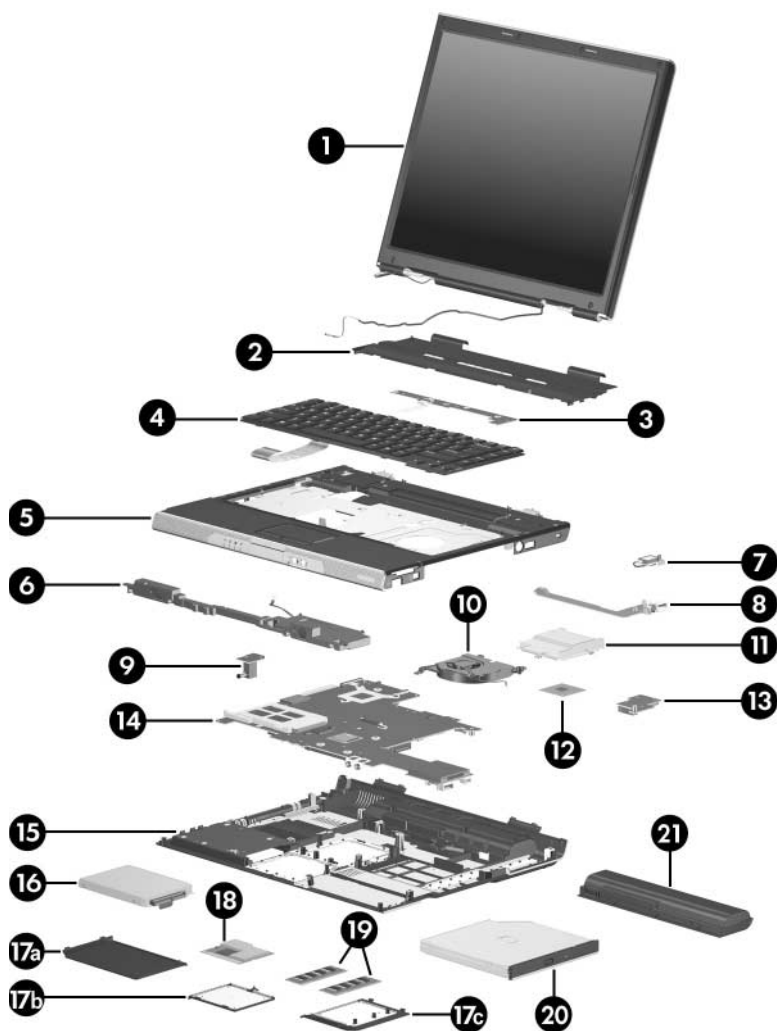
Notebook Major Components, HP Pavilion ze2000

Table 3-1

Spare Parts: Notebook Major Components

Item	Description	Spare Part Number
1	**Display assemblies** (include wireless antenna boards and cables)	
	15.0-inch, XGA TFT, for use on HP Pavilion ze2000 models	381065-001
	15.0-inch, XGA TFT, for use on Compaq Presario M2000 models	381066-001
	Display hinge brackets (not illustrated)	
	For use on HP Pavilion ze2000 models	382417-001
	For use on Compaq Presario M2000 models	383190-001
	Hinge cover (not illustrated; for use only on Compaq Presario M2000 models**)**	382418-001
2	**Keyboard covers** (include wireless button and light)	
	For use on HP Pavilion ze2000 models with wireless capability	382406-001
	For use on HP Pavilion ze2000 models without wireless capability	382408-001
	For use on Compaq Presario M2000 models with wireless capability	382407-001
	For use on Compaq Presario M2000 models without wireless capability	382409-001
3	**LED boards** (include cable, not illustrated)	
	For use on HP Pavilion ze2000 models	382415-001
	For use on Compaq Presario M2000 models	382907-001
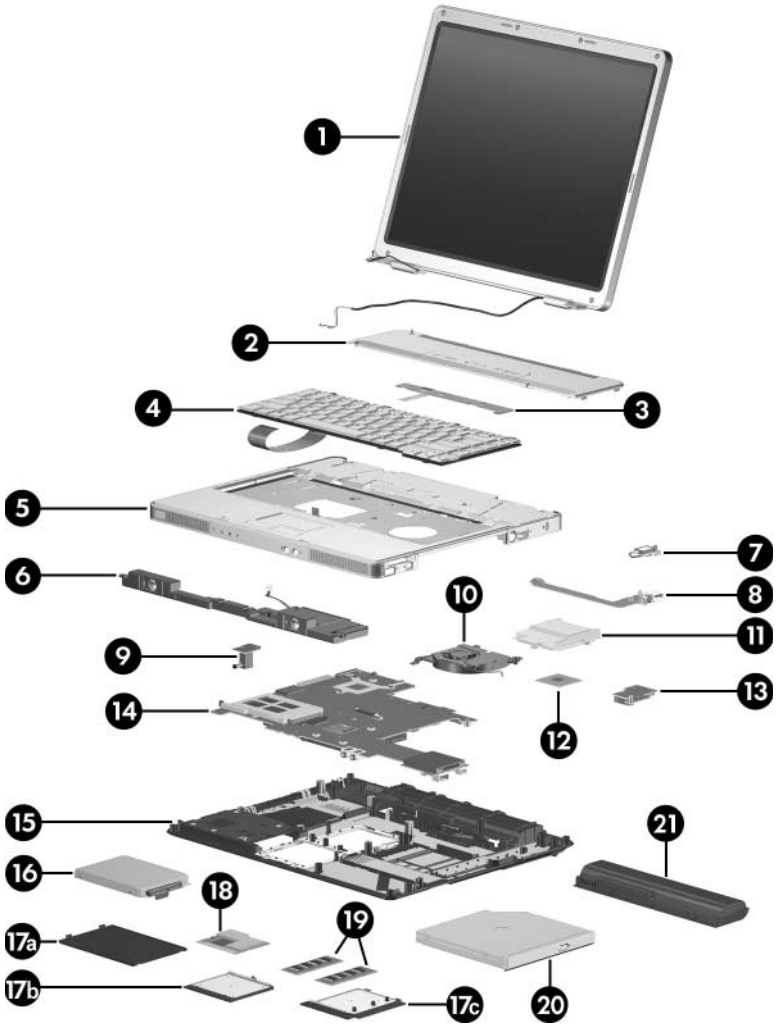
Notebook Major Components, Compaq Presario M2000

Table 3-1

Spare Parts: Notebook Major Components *(Continued)*

Item	Description		Spare Part Number
4	**Keyboards**		

For use on HP Pavilion ze2000 models in:

Belgium	367778-A41	Saudi Arabia	367778-171
Brazil	367778-201	Spain	367778-071
Denmark	367778-081	Sweden/Finland	367778-B71
France	367778-051	Switzerland	367778-111
French Canada	367778-121	Taiwan	367778-AB1
Germany	367778-041	Thailand	367778-281
Greece	367778-DJ1	United Kingdom	367778-031
Israel	367778-BB1	Asia Pacific,	367778-001
Italy	367778-061	Australia,	
Korea	367778-AD1	Canada,	
Latin America	367778-161	Hong Kong,	
Europe and the Netherlands	367778-331	People's Republic	
Norway	367778-091	of China, and the United	
Portugal	367778-131	States	

For use on Compaq Presario M2000 models in:

Denmark	367777-081	Norway	367777-091
France	367777-051	Spain	367777-071
French Canada	367777-121	Sweden/Finland	367777-B71
International	367777-021	Taiwan	367777-AB1
Italy	367777-061	Thailand	367777-281
Korea	367777-AD1	United Kingdom	367777-031
Latin America	367777-161	United States	367777-001

Notebook Major Components, HP Pavilion ze2000

Table 3-1

Spare Parts: Notebook Major Components *(Continued)*

Item	Description	Spare Part Number
5	**Top covers** (include TouchPad)	
	For use on HP Pavilion ze2000 models with full-featured models	382396-001
	For use on HP Pavilion ze2000 models with defeatured models	382905-001
	For use on Compaq M2000 models with full-featured models	382397-001
	For use on Compaq M2000 models with defeatured models	382906-001
6	**Speaker assemblies**	
	For use on HP Pavilion ze2000 models	382410-001
	For use on Compaq Presario M2000 models	383189-001
7	**Broadcomm Bluetooth Wireless LAN board**	376651-001
8	**USB/S-Video controller board**	382416-001
9	**Power connector board**	382414-001
10	**Fan** (includes thermal pad)	382411-001
11	**Heat sink** (includes thermal pad)	382412-001
12	**Processors** (include thermal pad)	
	Intel Pentium M 745 (1.8-GHz) with 400-MHz FSB	373053-001
	Intel Pentium M 735 (1.7-GHz) with 400-MHz FSB	373052-001
	Intel Pentium M 725 (1.6-GHz) with 400-MHz FSB	367771-001
	Intel Pentium M 715A (1.5-GHz) with 400-MHz FSB	380690-001
	Intel Celeron M 360 (1.4-GHz) with 400-MHz FSB	380033-001
	Intel Celeron M 350 (1.3-GHz) with 400-MHz FSB	380032-001
13	**Battery connector board**	382413-001
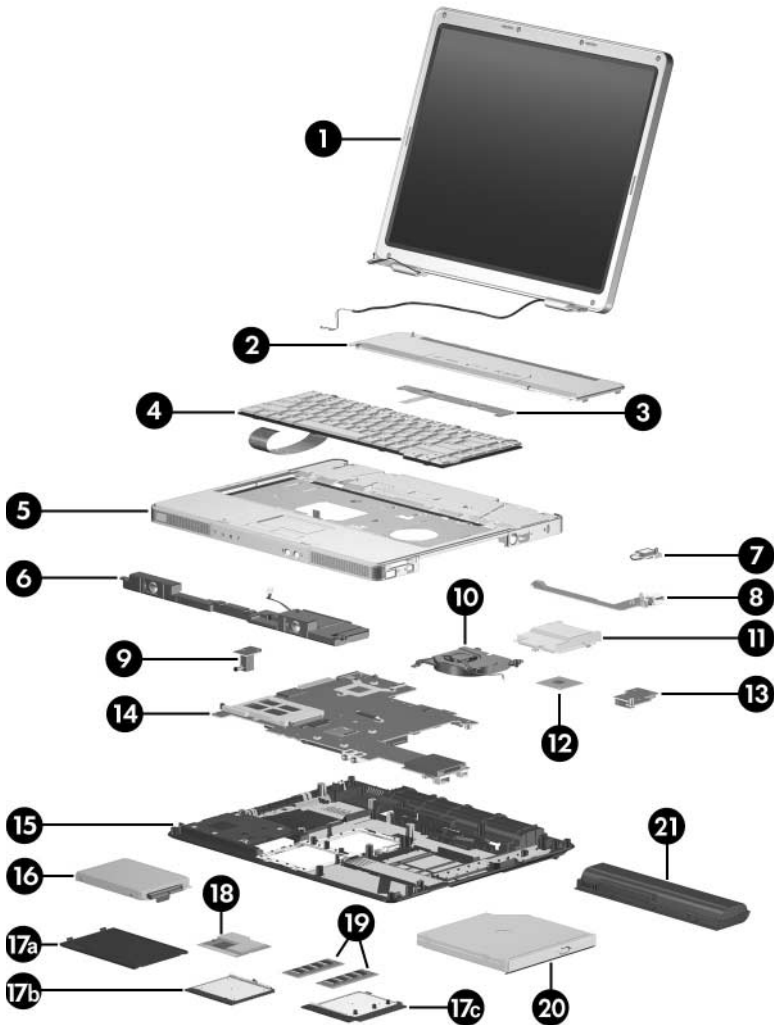
Notebook Major Components, Compaq Presario M2000

Table 3-1

Spare Parts: Notebook Major Components *(Continued)*

Item	Description	Spare Part Number
14	**System boards** (include disk cell RTC battery)	
	For use on models with full-featured models	381062-001
	For use on models with defeatured models	381061-001
15	**Base enclosures**	
	For use on HP Pavilion ze2000 models	382398-001
	For use on Compaq Presario M2000 models	382399-001
16	**Hard drives** (all 4200-rpm, include frame and connector)	
	80 GB	381398-001
	60 GB	381397-001
	40 GB	381396-001
	Miscellaneous Plastics Kit	
	For use on HP Pavilion ze2000 models	382400-001
	For use on Compaq Presario M2000 models	382401-001
	Includes:	
17a	Hard drive cover (includes two captive screws)	
17b	Memory module compartment cover (includes 2 captive screws)	
17c	Mini PCI compartment cover (includes 2 captive screws)	
	Not illustrated:	
	PC Card slot space saver	
	Notebook feet (4)	
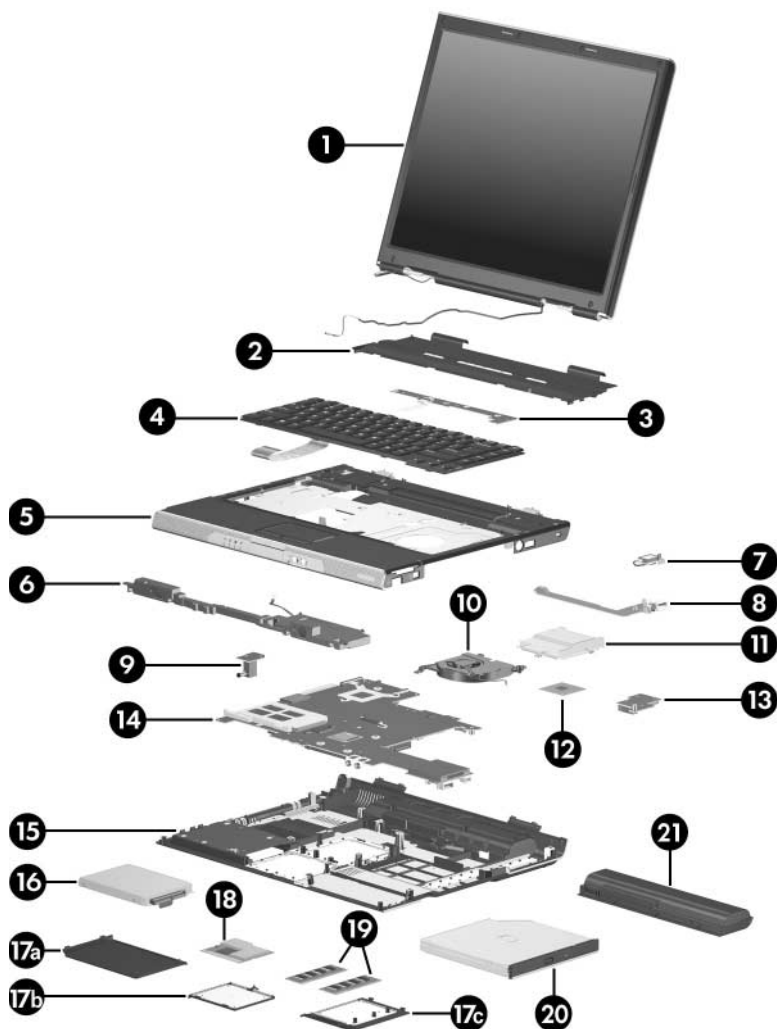
Notebook Major Components, HP Pavilion ze2000

Table 3-1

Spare Parts: Notebook Major Components *(Continued)*

Item	Description	Spare Part Number
18	**Mini PCI communications cards**	
	802.11b/g Broadcomm (MOW)	373047-001
	802.11b/g Broadcomm (ROW)	373048-001
	802.11b Intel (MOW)	373023-001
	802.11b Intel (ROW)	373024-001
	802.11b/g Intel (MOW)	373026-001
	802.11b/g Intel (ROW)	373025-001
19	**Memory modules** (266 MHz)	
	512-MB	381395-001
	256-MB	381394-001
20	**Optical drives** (include bezel)	
	For use on HP Pavilion ze2000 models	
	8X DVD-ROM drive	381399-001
	24X DVD/CD-RW Combo Drive	381401-001
	8X DVD±RW/R and CD-RW Combo Drive	381403-001
	For use on Compaq Presario M2000 models	
	8X DVD-ROM drive	381400-001
	24X DVD/CD-RW Combo Drive	381402-001
	8X DVD±RW/R and CD-RW Combo Drive	381404-001
	24X CD-ROM drive	382395-001
21	**Battery packs**	
	12-cell, 8.8-AHr	367760-001
	6-cell, 4.4-AHr	367759-001

3.3 Miscellaneous Plastics Kit
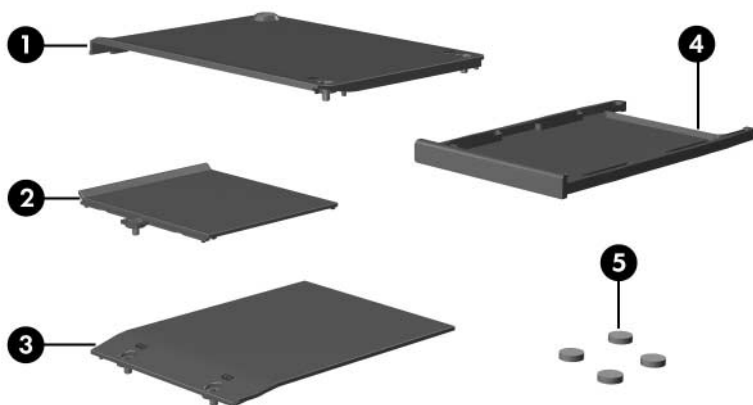
Miscellaneous Plastics Kit

Table 3-2

Miscellaneous Plastics Kit

Spare Part Number Information

Item	Description	Spare Part Number
	Miscellaneous Plastics Kit	
	For use on HP Pavilion ze2000 models	367765-001
	For use on Compaq Presario M2000 models	367766-001
	Includes:	
1	Memory module compartment cover	
2	Mini PCI compartment cover	
3	Hard drive cover	
4	PC Card slot space saver	
5	Notebook feet (4)	

3.4 Mass Storage Devices
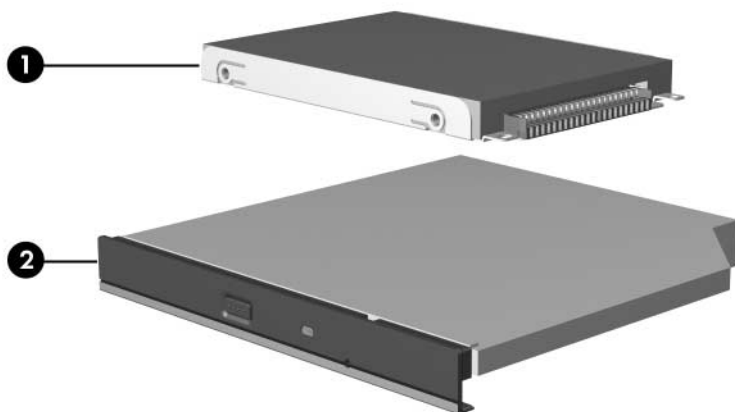
Mass Storage Devices

Table 3-3

Mass Storage Devices

Spare Part Number Information

Item	Description	Spare Part Number
1	**Hard drives** (all 4200-rpm; include frame and connector)	
	80-GB	381398-001
	60-GB	381397-001
	40-GB	381396-001
2	**Optical drives**	
	For use on HP Pavilion ze2000 models	
	8X DVD-ROM Drive	381399-001
	24X DVD/CD-RW Combo Drive	381401-001
	8X DVD±RW/R and CD-RW Combo Drive	381403-001
	For use on Compaq Presario M2000 models	
	8X DVD-ROM Drive	381400-001
	24X DVD/CD-RW Combo Drive	381402-001
	8X DVD±RW/R and CD-RW Combo Drive	381404-001
	24X CD-ROM Drive	382395-001
	USB digital drive (not illustrated)	364727-001

3.5 Miscellaneous

Table 3-4

Spare Parts: Miscellaneous (not illustrated)

Description	Spare Part Number
Logo Kits	
For use on HP Pavilion ze2000 models	382404-001
For use on Compaq Presario M2000 models	382405-001
Remote control (for use only on HP ze2000 notebook models)	371694-001
USB travel mouse	309674-001
Notebook entertainment cable and Y-cable	375759-001
65-watt AC adapter	371790-001
Screw Kit (includes the following screws; refer to Appendix C, "Screw Listing," for more information on screw specifications and usage)	
For use on HP Pavilion ze2000 models	382402-001
For use on Compaq Presario M2000 models	382403-001

■ Phillips PM2.5×4.0 screw   ■ Phillips PM2.0×4.0 screw

■ Phillips PM2.0×7.0 round head screw   ■ Phillips PM2.0×3.0 screw

■ Phillips PM2.0×7.0 screw   ■ Phillips PM1.5×2.0 screw

■ Phillips PM2.0×5.0 screw

Table 3-4

Spare Parts: Miscellaneous (not illustrated) *(Continued)*

Description	Spare Part Number
Power cords	
For use in:	
Australia and New Zealand	373979-011
Belgium, Europe, Finland, France, Germany, Greece, the Netherlands, Norway, Portugal, Spain, and Sweden	373979-021
Brazil	373979-201
Canada, French Canada, Latin America, Taiwan, Thailand, and the United States	373979-001
Denmark	373979-081
Hong Kong and the United Kingdom	373979-031
Israel	373979-BB1
Italy	373979-061
Japan	373979-291
Korea	373979-AD1
People's Republic of China	373979-AA1
Switzerland	373979-111

3.6 Sequential Part Number Listing

Table 3-5

Spare Parts: Sequential Part Number Listing

Spare Part Number	Description
309674-001	USB travel mouse
367759-001	Battery pack, 6-cell, 4.4-AHr
367760-001	Battery pack, 12-cell, 8.8-AHr
367771-001	Processor, Intel Pentium M 725 (1.6-GHz) with 400-MHz FSB (includes thermal pad)
367777-001	Keyboard for use on Compaq Presario M2000 models in the United States
367777-021	Keyboard for use on Compaq Presario M2000 international models
367777-031	Keyboard for use on Compaq Presario M2000 models in the United Kingdom
367777-051	Keyboard for use on Compaq Presario M2000 models in France
367777-061	Keyboard for use on Compaq Presario M2000 models in Italy
367777-071	Keyboard for use on Compaq Presario M2000 models in Spain
367777-081	Keyboard for use on Compaq Presario M2000 models in Denmark
367777-091	Keyboard for use on Compaq Presario M2000 models in Norway
367777-121	Keyboard for use on Compaq Presario M2000 models in French Canada
367777-161	Keyboard for use on Compaq Presario M2000 models in Latin America

Table 3-5

Spare Parts: Sequential Part Number Listing *(Continued)*

Spare Part Number	Description
367777-281	Keyboard for use on Compaq Presario M2000 models in Thailand
367777-AB1	Keyboard for use on Compaq Presario M2000 models in Taiwan
367777-AD1	Keyboard for use on Compaq Presario M2000 models in Korea
367777-B71	Keyboard for use on Compaq Presario M2000 models in Sweden/Finland
367778-001	Keyboard for use on HP Pavilion ze2000 models in Asia Pacific, Australia, Canada, Hong Kong, the People's Republic of China, and the United States
367778-031	Keyboard for use on HP Pavilion ze2000 models in the United Kingdom
367778-051	Keyboard for use on HP Pavilion ze2000 models in France
367778-061	Keyboard for use on HP Pavilion ze2000 models in Italy
367778-071	Keyboard for use on HP Pavilion ze2000 models in Spain
367778-081	Keyboard for use on HP Pavilion ze2000 models in Denmark
367778-091	Keyboard for use on HP Pavilion ze2000 models in Norway
367778-111	Keyboard for use on HP Pavilion ze2000 models in Switzerland
367778-121	Keyboard for use on HP Pavilion ze2000 models in French Canada
367778-131	Keyboard for use on HP Pavilion ze2000 models in Portugal
367778-151	Keyboard for use on HP Pavilion ze2000 models in Greece
367778-161	Keyboard for use on HP Pavilion ze2000 models in Latin America
367778-171	Keyboard for use on HP Pavilion ze2000 models in Saudi Arabia

Table 3-5

Spare Parts: Sequential Part Number Listing *(Continued)*

Spare Part Number	Description
367778-201	Keyboard for use on HP Pavilion ze2000 models in Brazil
367778-281	Keyboard for use on HP Pavilion ze2000 models in Thailand
367778-331	Keyboard for use on HP Pavilion ze2000 models in Europe and the Netherlands
367778-A41	Keyboard for use on HP Pavilion ze2000 models in Belgium
367778-AB1	Keyboard for use on HP Pavilion ze2000 models in Taiwan
367778-AD1	Keyboard for use on HP Pavilion ze2000 models in Korea
367778-B71	Keyboard for use on HP Pavilion ze2000 models in Sweden/Finland
367778-BB1	Keyboard for use on HP Pavilion ze2000 models in Israel
371694-001	Remote control (for use only on HP ze2000 models)
371790-001	65-watt AC adapter
373023-001	Mini PCI communications card, 802.11b Intel (MOW)
373024-001	Mini PCI communications card, 802.11b Intel (ROW)
373025-001	Mini PCI communications card, 802.11b/g Intel (ROW)
373026-001	Mini PCI communications card, 802.11b/g Intel (MOW)
373047-001	Mini PCI communications card, 802.11b/g Broadcomm (MOW)
373048-001	Mini PCI communications card, 802.11b/g Broadcomm (ROW)
373052-001	Processor, Intel Pentium M 735 (1.7-GHz) with 400-MHz FSB (includes thermal pad)
373053-001	Processor, Intel Pentium M 745 (1.8-GHz) with 400-MHz FSB (includes thermal pad)
373979-001	Power cord for use in Canada, French Canada, Latin America, Taiwan, Thailand, and the United States

Table 3-5

Spare Parts: Sequential Part Number Listing *(Continued)*

Spare Part Number	Description
373979-011	Power cord for use in Australia and New Zealand
373979-021	Power cord for use in Belgium, Europe, Finland, France, Germany, Greece, the Netherlands, Norway, Portugal, Spain, and Sweden
373979-031	Power cord for use in Hong Kong and the United Kingdom
373979-061	Power cord for use in Italy
373979-081	Power cord for use in Denmark
373979-111	Power cord for use in Switzerland
373979-201	Power cord for use in Brazil
373979-AA1	Power cord for use in People's Republic of China
373979-AD1	Power cord for use in Korea
373979-BB1	Power cord for use in Israel
375759-001	Notebook entertainment cable and Y-cable
376651-001	Broadcomm Bluetooth Wireless LAN
380032-001	Processor, Intel Celeron M 350 (1.3-GHz) with 400-MHz FSB (includes thermal pad)
380033-001	Processor, Intel Celeron M 360 (1.4-GHz) with 400-MHz FSB (includes thermal pad)
380690-001	Processor, Intel Pentium M 715A (1.5-GHz) with 400-MHz FSB (includes thermal pad)
381061-001	System board for use on models with defeatured models (includes disk cell RTC battery)
381062-001	System board for use on models with full-featured models (includes disk cell RTC battery)

Table 3-5

Spare Parts: Sequential Part Number Listing *(Continued)*

Spare Part Number	Description
381065-001	Display assembly, 15.0-inch, XGA TFT, for use on HP Pavilion ze2000 models (includes wireless antenna boards and cables)
381066-001	Display assembly, 15.0-inch, XGA TFT, for use on Compaq Presario M2000 models (includes wireless antenna boards and cables)
381394-001	Memory module, 256-MB (266 MHz)
381395-001	Memory module, 512-MB (266 MHz)
381396-001	Hard drive, 4200-rpm, 40-GB (includes frame and connector)
381397-001	Hard drive, 4200-rpm, 60-GB (includes frame and connector)
381398-001	Hard drive, 4200-rpm, 80-GB (includes frame and connector)
381399-001	8X DVD-ROM Drive for use on HP Pavilion ze2000 models (includes bezel)
381400-001	8X DVD-ROM Drive for use on Compaq Presario M2000 models (includes bezel)
381401-001	24X DVD/CD-RW Combo Drive for use on HP Pavilion ze2000 models (includes bezel)
381402-001	24X DVD/CD-RW Combo Drive for use on Compaq Presario M2000 models (includes bezel)
381403-001	8X DVD±RW/R and CD-RW Combo Drive for use on HP Pavilion ze2000 models (includes bezel)
381404-001	8X DVD±RW/R and CD-RW Combo Drive for use on Compaq Presario M2000 models (includes bezel)
382395-001	24X CD-ROM Drive for use on Compaq Presario M2000 models (includes bezel)
382396-001	Top cover for use on HP Pavilion ze2000 models with full-featured models (includes TouchPad)

Table 3-5

Spare Parts: Sequential Part Number Listing *(Continued)*

Spare Part Number	Description
382397-001	Top cover for use on Compaq M2000 models with full-featured models (includes TouchPad)
382398-001	Base enclosure for use on HP Pavilion ze2000 models
382399-001	Base enclosure for use on Compaq Presario M2000 models
382400-001	Miscellaneous Plastics Kit for use on HP Pavilion ze2000 models
382401-001	Miscellaneous Plastics Kit for use on Compaq Presario M2000 models
382402-001	Screw Kit for use on HP Pavilion ze2000 models
382403-001	Screw Kit For use on Compaq Presario M2000 models
382404-001	Logo Kit for use on HP Pavilion ze2000 models
382405-001	Logo Kit for use on Compaq Presario M2000 models
382406-001	Keyboard cover for use on HP Pavilion ze2000 models with wireless capability (includes wireless button and light)
382407-001	Keyboard cover for use on Compaq Presario M2000 models with wireless capability (includes wireless button and light)
382408-001	Keyboard cover for use on HP Pavilion ze2000 models without wireless capability (includes wireless button and light)
382409-001	Keyboard cover for use on Compaq Presario M2000 models without wireless capability (includes wireless button and light)
382410-001	Speaker assembly for use on HP Pavilion ze2000 models
382411-001	Fan (includes thermal pad)
382412-001	Heat sink (includes thermal pad)
382413-001	Battery connector board
382414-001	Power connector board

Table 3-5

Spare Parts: Sequential Part Number Listing *(Continued)*

Spare Part Number	Description
382415-001	LED board for use on HP Pavilion ze2000 models (includes cable)
382416-001	USB/S-Video controller board
382417-001	Display hinge brackets for use on HP Pavilion ze2000 models
382418-001	Hinge covers (for use only on Compaq Presario M2000 models)
382905-001	Top cover for use on HP Pavilion ze2000 models with defeatured models (includes TouchPad)
382906-001	Top cover for use on Compaq M2000 models with defeatured models (includes TouchPad)
382907-001	LED board for use on Compaq Presario M2000 models (includes cable)
383189-001	Speaker assembly for use on Compaq Presario M2000 models
383190-001	Display hinge brackets for use on Compaq Presario M2000 models

4

Removal and Replacement Preliminaries

This chapter provides essential information for proper and safe removal and replacement service.

4.1 Tools Required

You will need the following tools to complete the removal and replacement procedures:

- Magnetic driver
- Phillips P0 driver
- 5.0-mm socket for system board locks
- Flat-bladed driver
- Tool kit—includes connector removal tool, loopback plugs, and case utility tool

4.2 Service Considerations

The following sections include some of the considerations that you should keep in mind during disassembly and assembly procedures.

✎ As you remove each subassembly from the notebook, place the subassembly (and all accompanying s) away from the work area to prevent damage.

Plastic Parts

Using excessive force during disassembly and reassembly can damage plastic parts. Use care when handling the plastic parts. Apply pressure only at the points designated in the maintenance instructions.

Cables and Connectors

⚠ **CAUTION:** When servicing the notebook, ensure that cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the notebook.

Cables must be handled with extreme care to avoid damage. Apply only the tension required to unseat or seat the cables during removal and insertion. Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or tearing cables. Ensure that cables are routed in such a way that they cannot be caught or snagged by parts being removed or replaced. Handle flex cables with extreme care; these cables tear easily.

4.3 Preventing Damage to Removable Drives

Removable drives are fragile components that must be handled with care. To prevent damage to the notebook, damage to a removable drive, or loss of information, observe the following precautions:

■ Before removing or inserting a hard drive, shut down the notebook. If you are unsure whether the notebook is off or in hibernation, turn the notebook on, and then shut it down through the operating system.

■ Before removing a diskette drive or optical drive, ensure that a diskette or disc is not in the drive and ensure that the optical drive tray is closed.

■ Before handling a drive, ensure that you are discharged of static electricity. While handling a drive, avoid touching the connector.

■ Handle drives on surfaces covered with at least one inch of shock-proof foam.

■ Avoid dropping drives from any height onto any surface.

■ After removing a hard drive, an optical drive, or a diskette drive, place it in a static-proof bag.

■ Avoid exposing a hard drive to products that have magnetic fields, such as monitors or speakers.

■ Avoid exposing a drive to temperature extremes or liquids.

■ If a drive must be mailed, place the drive in a bubble pack mailer or other suitable form of protective packaging and label the package "Fragile: Handle With Care."

4.4 **Preventing Electrostatic Damage**

Many electronic components are sensitive to electrostatic discharge (ESD). Circuitry design and structure determine the degree of sensitivity. Networks built into many integrated circuits provide some protection, but in many cases, the discharge contains enough power to alter device parameters or melt silicon junctions.

A sudden discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Often the spark is neither felt nor heard, but damage occurs.

An electronic device exposed to electrostatic discharge might not be affected at all and can work perfectly throughout a normal cycle. Or the device might function normally for a while, then degrade in the internal layers, reducing its life expectancy.

4.5 Packaging and Transporting Precautions

Use the following grounding precautions when packaging and transporting equipment:

■ To avoid hand contact, transport products in static-safe containers, such as tubes, bags, or boxes.

■ Protect all electrostatic-sensitive parts and assemblies with conductive or approved containers or packaging.

■ Keep electrostatic-sensitive parts in their containers until the parts arrive at static-free workstations.

■ Place items on a grounded surface before removing items from their containers.

■ Always be properly grounded when touching a sensitive component or assembly.

■ Store reusable electrostatic-sensitive parts from assemblies in protective packaging or nonconductive foam.

■ Use transporters and conveyors made of antistatic belts and roller bushings. Ensure that mechanized equipment used for moving materials is wired to ground and that proper materials are selected to avoid static charging. When grounding is not possible, use an ionizer to dissipate electric charges.

4.6 **Workstation Precautions**

Use the following grounding precautions at workstations:

■ Cover the workstation with approved static-shielding material (refer to Table 4-2, "Static-Shielding Materials").

■ Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.

■ Use conductive field service tools, such as cutters, drivers, and vacuums.

■ When using fixtures must directly contact dissipative surfaces, use fixtures made only of static-safe materials.

■ Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and Styrofoam.

■ Handle electrostatic-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.

■ Avoid contact with pins, leads, or circuitry.

■ Turn off power and input signals before inserting or removing connectors or test equipment.

4.7 **Grounding Equipment and Methods**

Grounding equipment must include either a wrist strap or a foot strap at a grounded workstation.

■ When seated, wear a wrist strap connected to a grounded system. Wrist straps are flexible straps with a minimum of one megohm ±10% resistance in the ground cords. To provide proper ground, wear a strap snugly against the skin at all times. On grounded mats with banana-plug connectors, use alligator clips to connect a wrist strap.

■ When standing, use foot straps and a grounded floor mat. Foot straps (heel, toe, or boot straps) can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use foot straps on both feet with a minimum of one megohm resistance between the operator and ground. To be effective, the conductive strips must be worn in contact with the skin.

Other grounding equipment recommended for use in preventing electrostatic damage includes:

■ Antistatic tape

■ Antistatic smocks, aprons, and sleeve protectors

■ Conductive bins and other assembly or soldering aids

■ Nonconductive foam

■ Conductive tabletop workstations with ground cords of one megohm resistance

■ Static-dissipative tables or floor mats with hard ties to the ground

■ Field service kits

■ Static awareness labels

■ Material-handling packages

■ Nonconductive plastic bags, tubes, or boxes

■ Metal tote boxes

■ Electrostatic voltage levels and protective materials

Table 4-1 shows how humidity affects the electrostatic voltage levels generated by different activities.

Table 4-1

Typical Electrostatic Voltage Levels

Event	Relative Humidity		
	10%	40%	55%
Walking across carpet	35,000 V	15,000 V	7,500 V
Walking across vinyl floor	12,000 V	5,000 V	3,000 V
Motions of bench worker	6,000 V	800 V	400 V
Removing DIPS from plastic tube	2,000 V	700 V	400 V
Removing DIPS from vinyl tray	11,500 V	4,000 V	2,000 V
Removing DIPS from Styrofoam	14,500 V	5,000 V	3,500 V
Removing bubble pack from PCB	26,500 V	20,000 V	7,000 V
Packing PCBs in foam-lined box	21,000 V	11,000 V	5,000 V

✎ A product can be degraded by as little as 700 V.

Table 4-2 lists the shielding protection provided by antistatic bags and floor mats.

Table 4-2

Static-Shielding Materials

Material	Use	Voltage Protection Level
Antistatic plastic	Bags	1,500 V
Carbon-loaded plastic	Floor mats	7,500 V
Metallized laminate	Floor mats	5,000 V

5

Removal and Replacement Procedures

This chapter provides removal and replacement procedures.

There are 61 screws, in 10 different sizes, that must be removed, replaced, or loosened when servicing the notebook. Make special note of each screw size and location during removal and replacement.

Refer to Appendix C, "Screw Listing," for detailed information on screw sizes, locations, and usage.

5.1 **Serial Number**

Report the notebook serial number to HP when requesting information or ordering spare parts. The serial number is located on the bottom of the notebook.

Serial Number Location

5.2 Disassembly Sequence Chart

Use the chart below to determine the section number to be referenced when removing notebook components.

Disassembly Sequence Chart

Section	Description	# of Screws Removed
5.3	Preparing the notebook for disassembly	
	Battery pack	0
	Hard drive	2 loosened to remove hard drive cover
		4 to disassemble hard drive
5.4	Notebook feet	0
5.5	Optical drive	1
5.6	Memory module	2 loosened
5.7	Mini PCI communications card	1 loosened
	⚠ To prevent an unresponsive system and the display of a warning message, install only a Mini PCI device authorized for use in your notebook by the governmental agency that regulates wireless devices in your country. If you install a device and then receive a warning message, remove the device to restore notebook functionality. Then contact Customer Care.	
5.8	Keyboard cover	2
5.9	LED cover	2
5.10	Keyboard	4

Disassembly Sequence Chart *(Continued)*

Section	Description	# of Screws Removed
5.11	Display assembly	HP Pavilion ze2000 = 4 Compaq Presario M2000 = 6
5.12	Base enclosure	HP Pavilion ze2000 = 23 Compaq Presario M2000 = 21
5.13	Speaker assembly	0
5.14	Heat sink	3
5.15	Fan	2
5.16	Processor	0
5.17	Battery connector board	2
5.18	Power connector board	2
5.19	USB/S-Video controller board	2
5.20	Bluetooth board	2
5.21	System board	HP Pavilion ze2000 = 2 Compaq Presario M2000 = 3

5.3 Preparing the Notebook for Disassembly

Before you begin any removal or installation procedures:

1. Shut down the notebook. If you are unsure whether the notebook is off or in hibernation, turn the computer on, and then shut it down through the operating system.

2. Disconnect all external devices connected to the notebook.

3. Disconnect the power cord.

Battery Pack Spare Part Number Information

12-cell, 8.8-AHr	367760-001
6-cell, 4.4-AHr	367759-001

4. Remove the battery pack by following these steps:

   a. Turn the notebook upside down with the front panel toward you.

   b. Slide and hold the battery release latch ❶ to the left. (The front edge of the battery pack disengages from the notebook.)

   c. Lift the front edge of the battery pack up and swing it back ❷.

   d. Remove the battery pack.
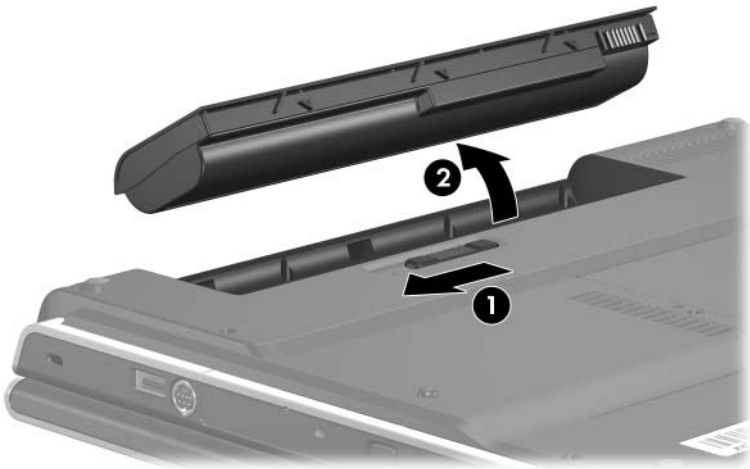
Removing the Battery Pack

Reverse the above procedure to install the battery pack.

Hard Drive Spare Part Number Information

80-GB (4200-rpm; includes frame and connector)	381398-001
60-GB (4200-rpm; includes frame and connector)	381397-001
40-GB (4200-rpm; includes frame and connector)	381396-001

5. Remove the hard drive by following these steps:

   a. Position the notebook with the rear panel toward you.

   b. Loosen the 2 black PM2.0×5.0 screws ❶ that secure the hard drive cover to the notebook.

   c. Lift the right side of the cover and swing it to the left ❷.

   d. Remove the hard drive cover.

✎ The hard drive cover is included in the Miscellaneous Plastics Kits, spare part numbers 382400-001 (for use on HP Pavilion ze2000 models) and 382401-001 (for use on Compaq Presario M2000 models).
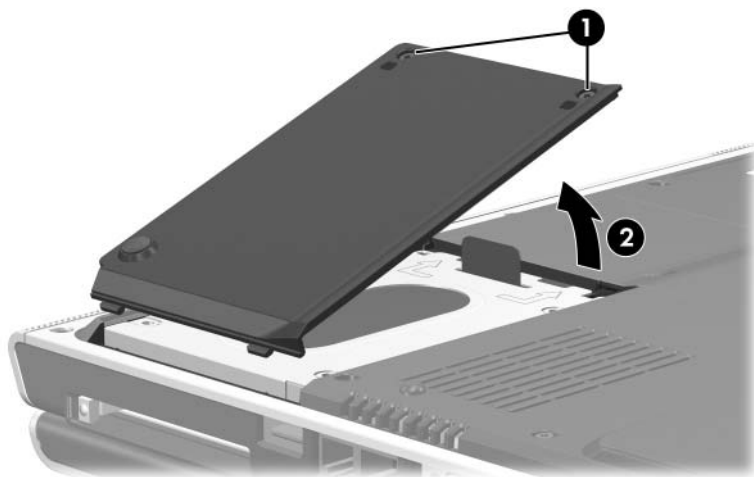
Removing the Hard Drive Cover

e. Use the mylar tab ❶ on the right side of the hard drive to lift the right side of the hard drive until it disconnects from the notebook.

f. Lift the hard drive straight up ❷ and remove it from the hard drive bay.
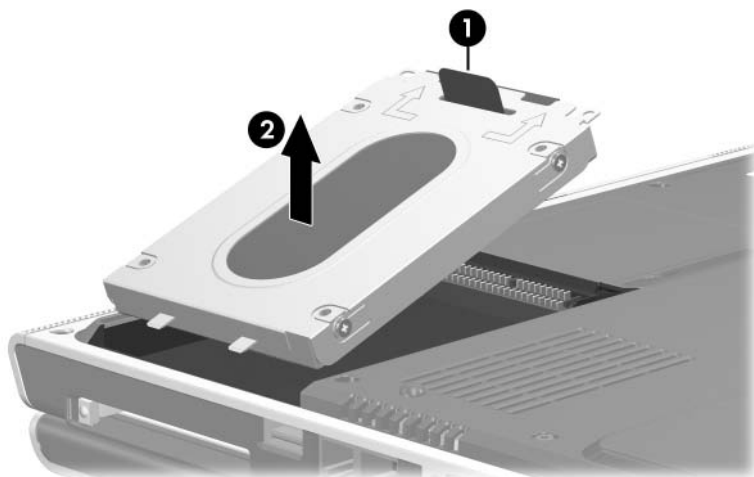
Removing the Hard Drive

g. Remove the 4 silver PM2.5×4.0 screws ❶ that secure the hard drive frame to the hard drive.

h. Lift the frame up ❷ to remove if from the hard drive.

i. Slide the hard drive connector ❸ toward you and remove it.
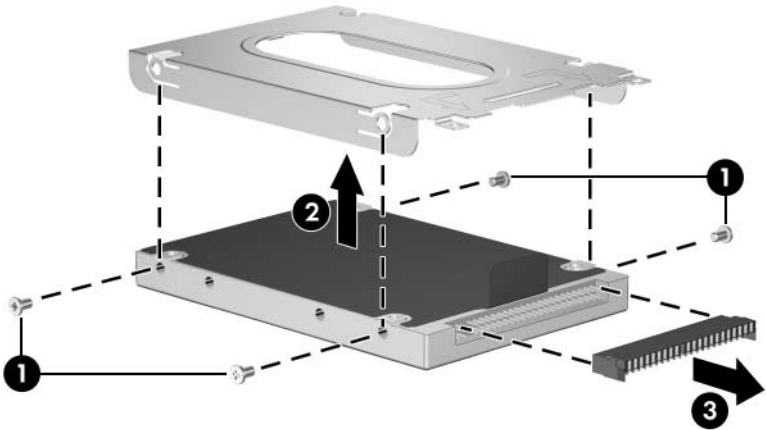
Removing the Hard Drive Frame and Connector

Reverse the above procedure to reassemble and install the hard drive.

5.4 Notebook Feet

The notebook feet are adhesive-backed rubber pads. The feet are included in the Miscellaneous Plastics Kits, spare part numbers 382400-001 (for use on HP Pavilion ze2000 models) and 382401-001 (for use on Compaq Presario M2000 models). The feet attach to the base enclosure as illustrated below.
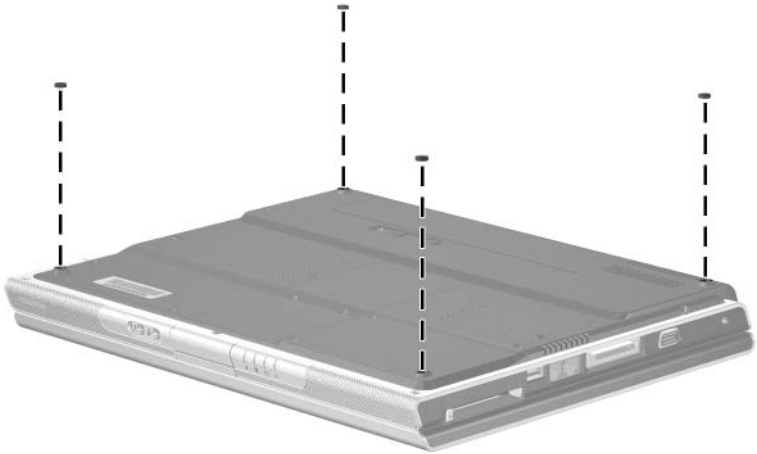
Replacing the Notebook Feet

5.5 Optical Drive

Optical Drive Spare Part Number Information

For use on HP Pavilion ze2000 models
8X DVD-ROM Drive	381399-001
24X DVD/CD-RW Combo Drive	381401-001
8X DVD±RW/R and CD-RW Combo Drive	381403-001

For use on Compaq Presario M2000 models
8X DVD-ROM Drive	381400-001
24X DVD/CD-RW Combo Drive	381402-001
8X DVD±RW/R and CD-RW Combo Drive	381404-001
24X CD-ROM Drive	382395-001

1. Prepare the notebook for disassembly (Section 5.3).

2. Remove the hard drive cover (Section 5.3).

3. Remove the black PM2.0×6.0 screw ❶ that secures the optical drive to the notebook.

✎ The Compaq Presario M2000 optical drive is secured by one black PM2.0×7.0 screw.

4. Insert a thin tool, such as a paper clip, into the media tray release hole ❷. (The optical drive media tray releases from the optical drive.)

5. Use the media tray frame to slide the optical drive to the right ❸.

6. Remove the optical drive.
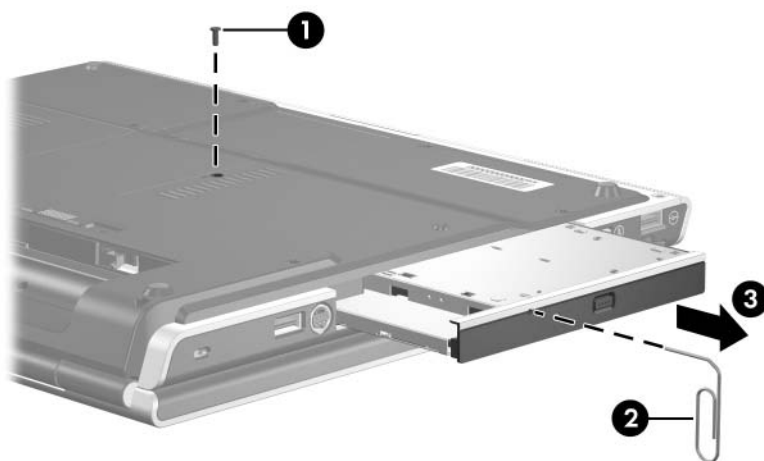
Removing the Optical Drive

Reverse the above procedure to install an optical drive.

5.6 Memory Module

Memory Module Spare Part Number Information	
512-MB	381395-001
256-MB	381394-001

1. Prepare the notebook for disassembly (refer to Section 5.3).

2. Loosen the 2 black PM2.0×5.0 screws ❶ that secure the memory module compartment cover to the notebook.

3. Lift the rear edge of the memory module compartment cover up and swing it toward you ❷.

4. Remove the memory module compartment cover.

✎ The memory module compartment cover is included in the Miscellaneous Plastics Kits, spare part numbers 382400-001 (for use on HP Pavilion ze2000 models) and 382401-001 (for use on Compaq Presario M2000 models).
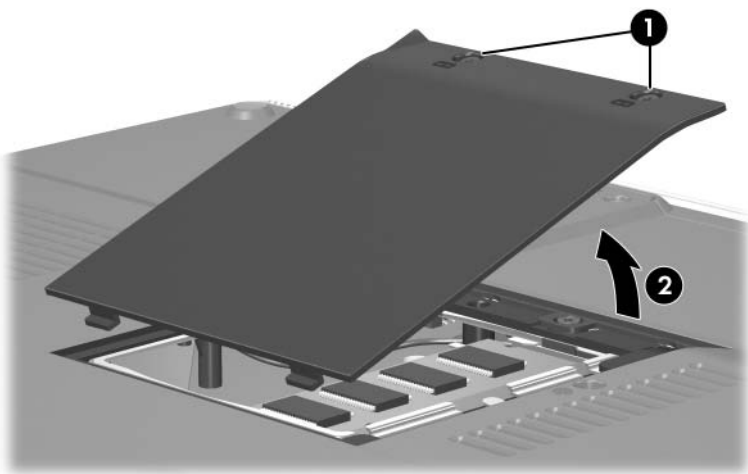
Removing the Memory Module Compartment Cover

5. Spread the retaining tabs ❶ on each side of the memory module socket to release the memory module. (The right side of the module rises away from the notebook.)

6. Slide the module away from the socket at an angle ❷.

✎ Note that memory modules are slotted ❸ to prevent incorrect installation into the memory module socket.
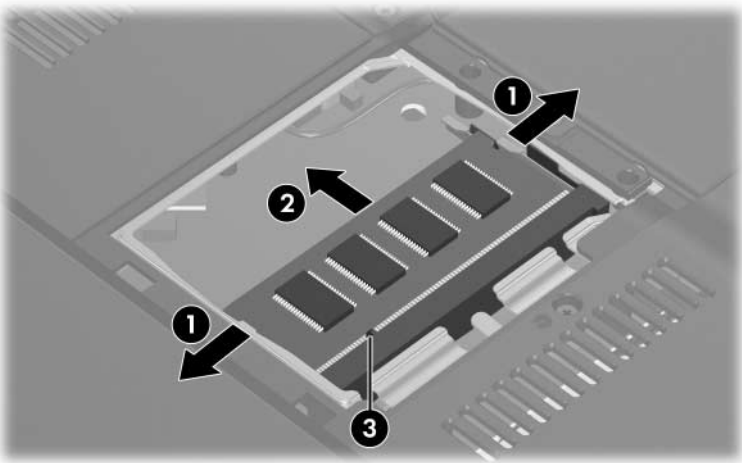
Removing the Memory Module

Reverse the above procedure to install a memory module.

5.7 Mini PCI Communications Card

Mini PCI Communications Card	
Spare Part Number Information	
802.11b/g Broadcomm (MOW)	373047-001
802.11b/g Broadcomm (ROW)	373048-001
802.11b Intel (MOW)	373023-001
802.11b Intel (ROW)	373024-001
802.11b/g Intel (MOW)	373026-001
802.11b/g Intel (ROW)	373025-001

1. Prepare the notebook for disassembly (Section 5.3).

2. Loosen the black PM2.0×5.0 screw ❶ that secures the Mini PCI compartment cover to the notebook.

3. Lift the rear edge of the Mini PCI compartment cover up and then swing it toward you ❷.

4. Remove the Mini PCI compartment cover.

✎ The Mini PCI compartment cover is included in the Miscellaneous Plastics Kits, spare part numbers 382400-001 (for use on HP Pavilion ze2000 models) and 382401-001 (for use on Compaq Presario M2000 models).
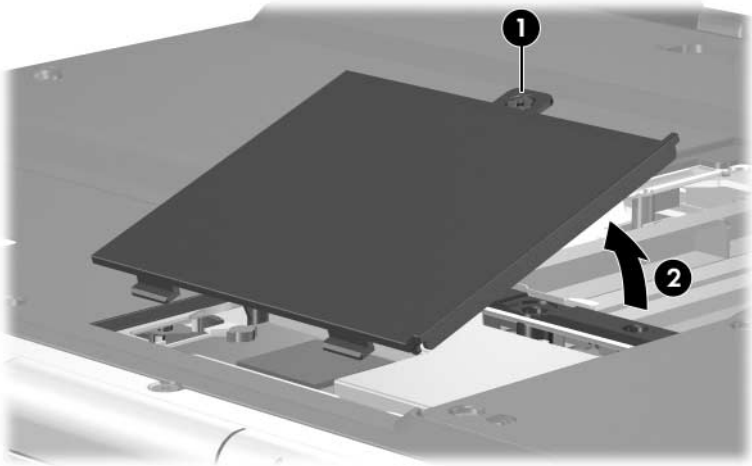
Removing the Mini PCI Compartment Cover

✎ Before disconnecting the cables, make note of which wireless antenna cable is attached to which antenna clip on the Mini PCI communications card.

5. Disconnect the wireless antenna cables ❶ from the Mini PCI communications card.

6. Spread the two retaining tabs ❷ that secure the Mini PCI communications card to the communications compartment socket. (The front edge of the board rises up).

7. Remove the wireless communications card by pulling the board away from the socket at a 45-degree angle ❸.

✎ Mini PCI communications cards are slotted ❹ to prevent incorrect installation into the Mini PCI socket.
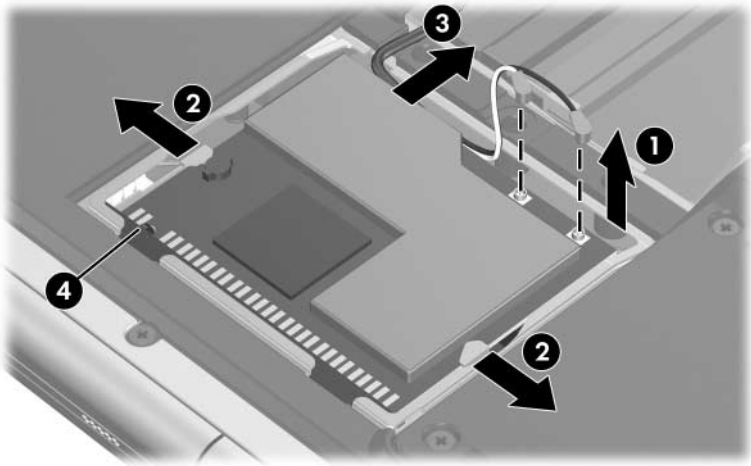
Removing a Mini PCI Communications Card

Reverse the above procedure to install a Mini PCI communications card.

5.8 Keyboard Cover

Keyboard Cover Spare Part Number Information

For use on HP Pavilion ze2000 models with wireless capability (includes wireless button and light)	382406-001
For use on HP Pavilion ze2000 models without wireless capability (includes wireless button and light)	382408-001
For use on Compaq Presario M2000 models with wireless capability (includes wireless button and light)	382407-001
For use on Compaq Presario M2000 models without wireless capability (includes wireless button and light)	382409-001

1. Prepare the notebook for disassembly (Section 5.3).

2. Turn the notebook upside down with the rear panel toward you.

3. Remove the 2 silver PM2.0×5.0 screws that secure the keyboard cover to the notebook.
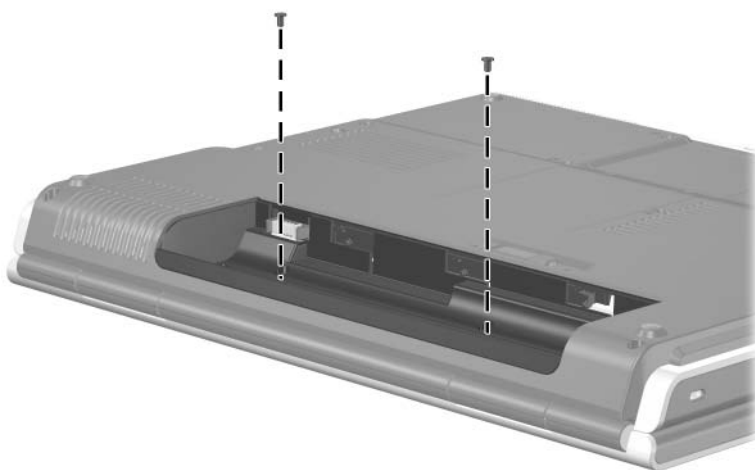
Removing the Keyboard Cover Screws

4. Turn the notebook display-side up with the front panel toward you.

5. Open the notebook as far as possible.

6. Insert a flat blade tool into the keyboard cover notches behind the **f1**, **f5**, **f11**, and **insert** keys ❶ and lift up ❷ until the keyboard cover disengages from the notebook.

7. Remove the keyboard cover.
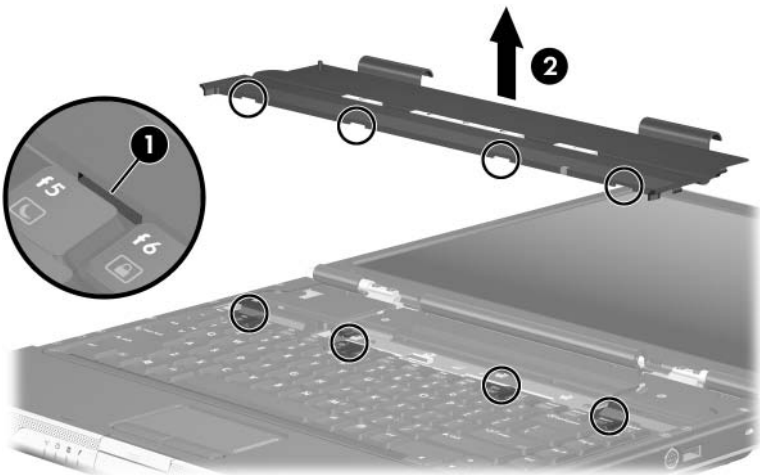
Removing the Keyboard Cover

Reverse the above procedure to install the keyboard cover.

5.9 LED Board

LED Board Spare Part Number Information

For use on HP Pavilion ze2000 models	382415-001
For use on Compaq Presario M2000 models	382907-001

1. Prepare the notebook for disassembly (Section 5.3).

2. Remove the keyboard cover (Section 5.8).

3. Release the zero insertion force (ZIF) connector to which the keyboard cable is connected and disconnect the keyboard cable ❶ from the system board.

4. Remove the 2 silver PM2.0×3.0 screws ❷ that secure the LED board to the notebook.

5. Remove the LED board ❸.
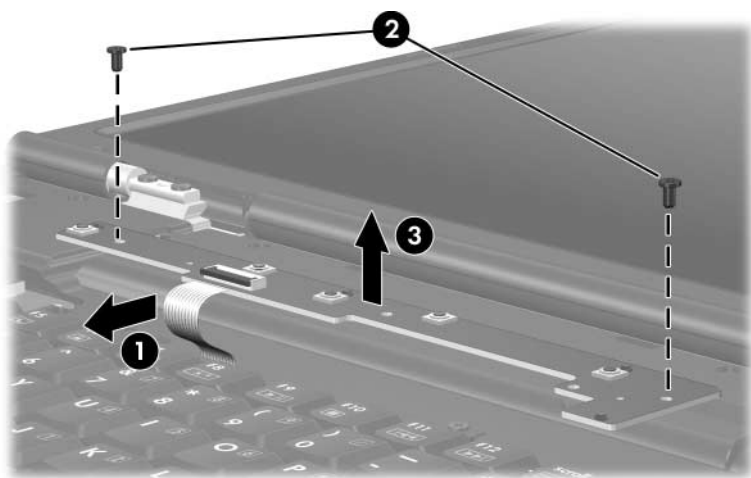
Removing the LED Board

Reverse the above procedure to install the LED board.

5.10   Keyboard

Keyboard Spare Part Number Information

For use on HP Pavilion ze2000 models in:

Belgium	367778-A41	Portugal	367778-131
Brazil	367778-201	Saudi Arabia	367778-171
Denmark	367778-081	Spain	367778-071
France	367778-051	Sweden/Finland	367778-B71
French Canada	367778-121	Switzerland	367778-111
Germany	367778-041	Taiwan	367778-AB1
Greece	367778-DJ1	Thailand	367778-281
Israel	367778-BB1	United Kingdom	367778-031
Italy	367778-061	Asia Pacific, Australia,	367778-001
Korea	367778-AD1	Canada,	
Latin America	367778-161	Hong Kong, People's	
Europe and the Netherlands	367778-331	Republic of China, and the	
Norway	367778-091	United States	

For use on Compaq Presario M2000 models in:

Denmark	367777-081	Norway	367777-091
France	367777-051	Spain	367777-071
French Canada	367777-121	Sweden/Finland	367777-B71
International	367777-021	Taiwan	367777-AB1
Italy	367777-061	Thailand	367777-281
Korea	367777-AD1	United Kingdom	367777-031
Latin America	367777-161	United States	367777-001

1. Prepare the notebook for disassembly (Section 5.3).

2. Remove the keyboard cover (Section 5.8).

3. Remove the 3 black PM2.0×4.0 screws ❶ and the black PM2.0×6.0 screw ❷ that secure the keyboard to the notebook.
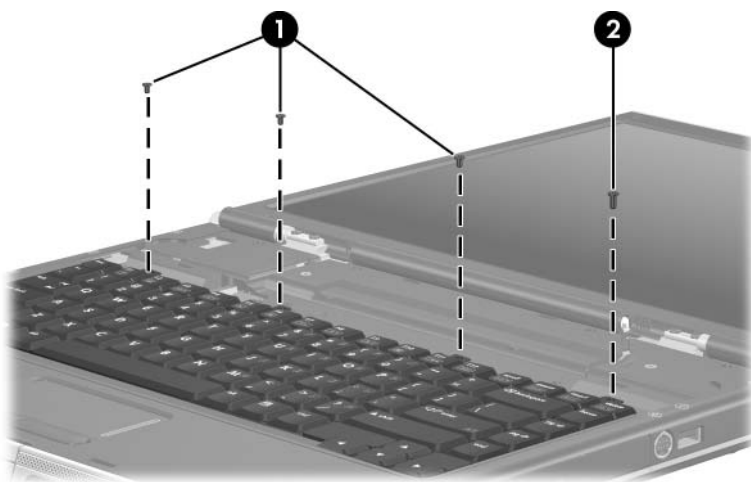
Removing the Keyboard Screws

4. Lift the rear edge of the keyboard and swing it toward you until it rests on the palm rest.

Releasing the Keyboard

5. Release the zero insertion force (ZIF) connector ❶ to which the keyboard cable is connected and disconnect the keyboard cable ❷ from the system board.

6. Remove the keyboard.
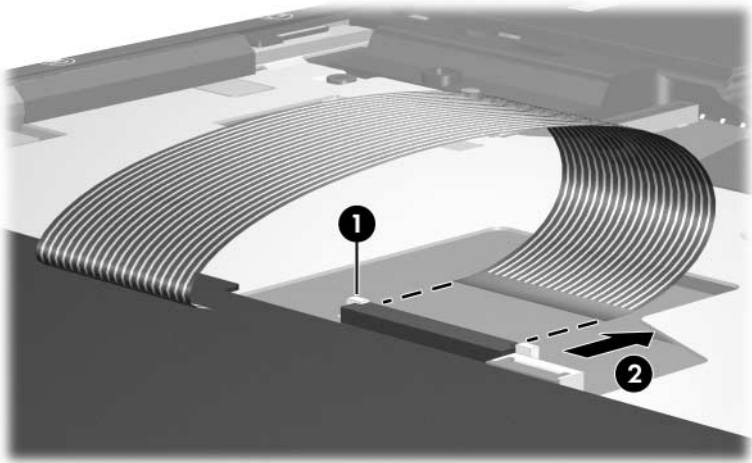
Disconnecting the Keyboard Cable

Reverse the above procedure to install the keyboard.

5.11   Display Assembly

Display Assembly Spare Part Number Information

15.0-inch, XGA TFT, for use on HP Pavilion ze2000 models (includes wireless antenna boards and cables)	381065-001
15.0-inch, XGA TFT, for use on Compaq Presario M2000 models (includes wireless antenna boards and cables)	381066-001
Display hinge brackets (not illustrated)	
For use on HP Pavilion ze2000 models	382417-001
For use on Compaq Presario M2000 models	383190-001
Hinge cover (not illustrated; for use only on Compaq Presario M2000 models)	382418-001

1. Prepare the notebook for disassembly (Section 5.3) and remove the following components:

   a. Memory module compartment cover (Section 5.6)

   b. Mini PCI compartment cover (Section 5.7)

   c. Keyboard cover (Section 5.8)

   d. Keyboard (Section 5.10)

2. Disconnect the wireless antenna cables from the Mini PCI communications card ❶.

3. Remove the cables from the clip ❷ in the base enclosure.
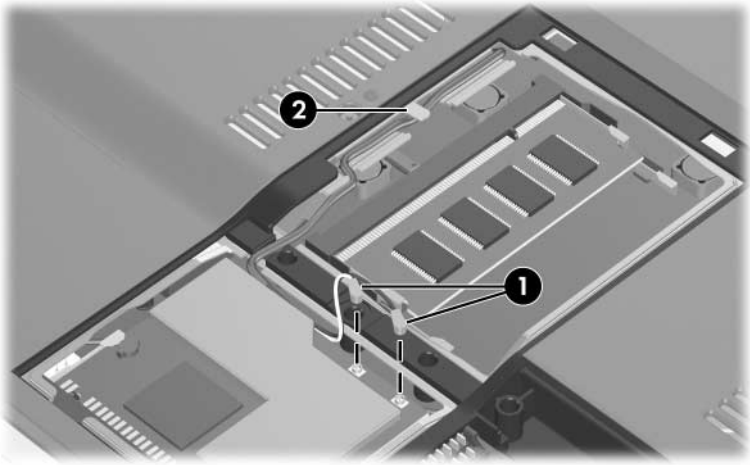
Disconnecting and Removing the Wireless Antenna Cables

4. Turn the notebook display-side up with the front toward you.

5. Open the display.

6. Disconnect the display cable from the system board ❶.

7. Remove the wireless antenna cables from the clips ❷ in the top cover.
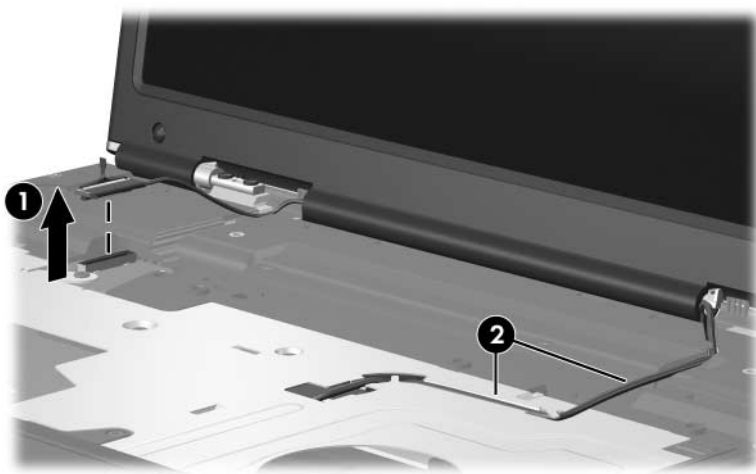
Disconnecting the Display Cables

△ **CAUTION:** Support the display assembly when removing the following screws. Failure to follow this caution can result in damage to the display assembly.

✎ Steps 8 and 9 apply only to HP Pavilion ze2000 models. See steps 10 and 11 in this section for information on removing the display assembly on Compaq Presario M2000 models.

8. Remove the 4 black PM2.0×6.0 screws ❶ that secure the display assembly to the notebook.

9. Remove the display assembly ❷.
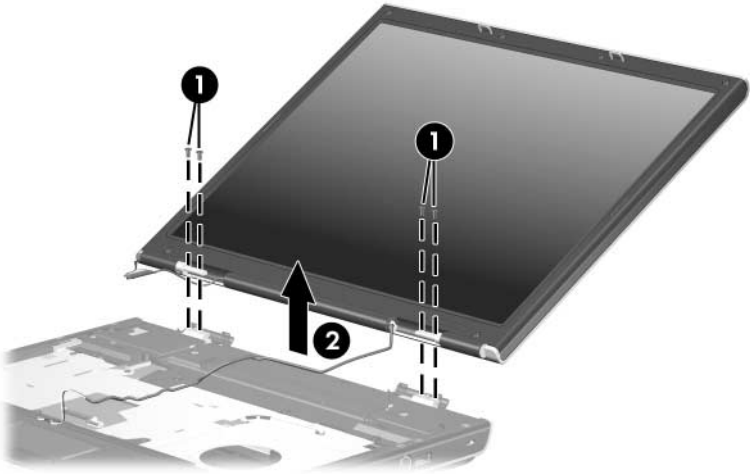
*Removing the Display Assembly Screws,
HP Pavilion ze2000 Models Only*

△ **CAUTION:** Support the display assembly when removing the following screws. Failure to follow this caution can result in damage to the display assembly.

✎ Steps 10 and 11 apply only to Compaq Presario M2000 models.

10. Remove the 6 black PM2.0×6.0 screws ❶ that secure the display assembly to the notebook.

11. Remove the display assembly ❷.
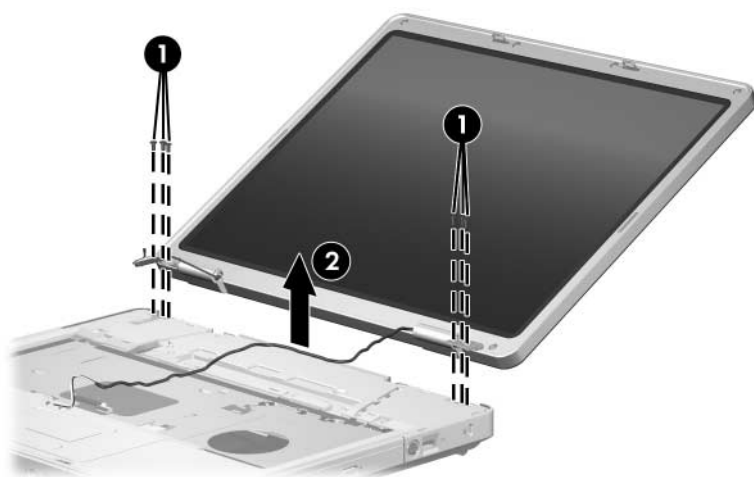
Removing the Display Assembly,
Compaq Presario M2000 Models Only

Reverse the above procedure to install the display assembly.

5.12   Base Enclosure

Base Enclosure Spare Part Number Information

For use on HP Pavilion ze2000 models	382398-001
For use on Compaq Presario M2000 models	382399-001

1. Prepare the notebook for disassembly (Section 5.3) and remove the following components:

   a. Optical drive (Section 5.5)

   b. Memory module compartment cover (Section 5.6)

   c. Mini PCI compartment cover (Section 5.7)

   d. Keyboard cover (Section 5.8)

   e. Keyboard (Section 5.10)

   f. Display assembly (Section 5.11)

2. Position the notebook with the front panel toward you.

✎ Steps 3 through 5 apply only to HP Pavilion ze2000 models. See steps 6 through 8 in this section for information on removing the base enclosure screws on Compaq Presario M2000 models.

3. Remove the 3 black PM2.0×6.0 screws ❶ and the 2 black PM2.0×4.0 screws ❷ that secure the base enclosure to the notebook.
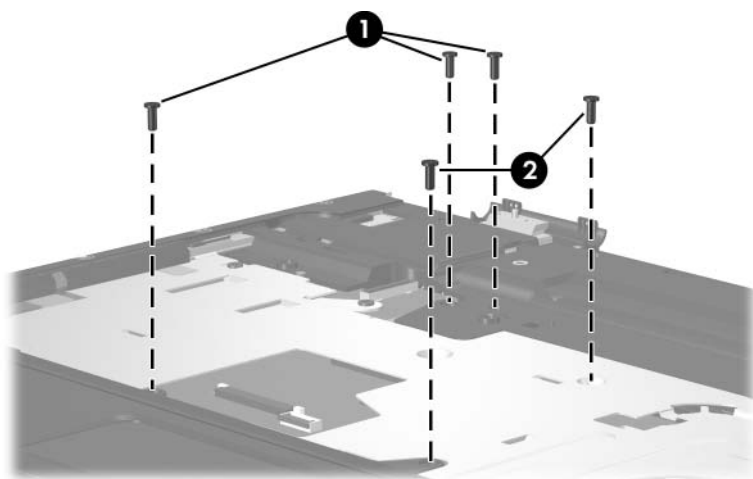
Removing the Base Enclosure Screws, Part 1,
HP Pavilion ze2000 Models Only

4. Turn the notebook upside down with the rear panel toward you.

5. Remove the following:

❶ Five PM2.0×16.0 screws that secure the base enclosure the notebook

❷ Seven black PM2.0×6.0 screws that secure the base enclosure the notebook

❸ Six silver PM2.0×5.0 screws that secure the base enclosure the notebook
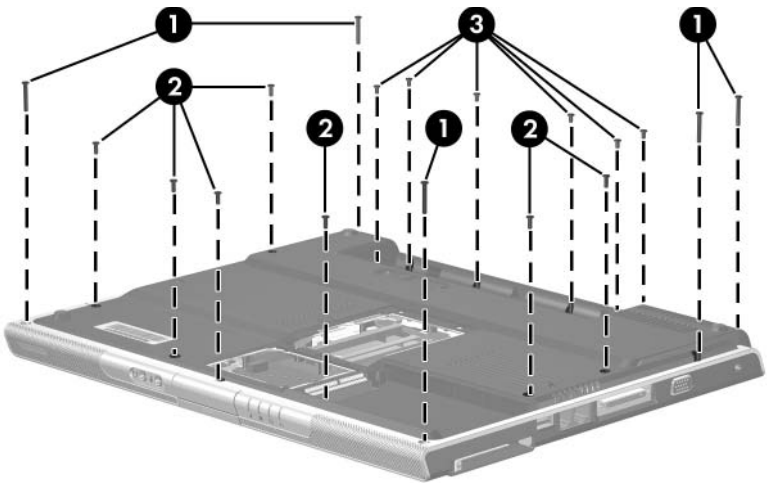
Removing the Base Enclosure Screws, Part 2,
HP Pavilion ze2000 Models Only

✎ Steps 6 through 8 apply only to Compaq Presario M2000 models.

6. Remove the 2 black PM2.0×7.0 screws ❶ and the silver PM2.0×5.0 screw ❷ that secure the base enclosure to the notebook.
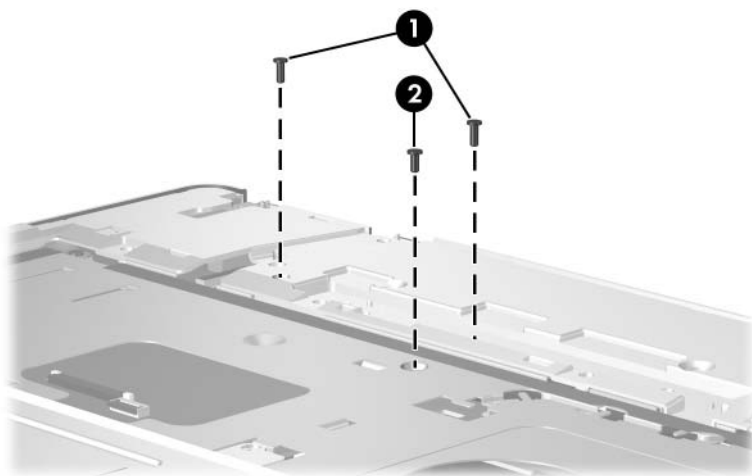
Removing the Base Enclosure Screws, Part 1,
Compaq Presario M2000 Models Only

7. Turn the notebook upside down with the rear panel toward you.

8. Remove the 3 black PM2.0×4.0 screws ❶ and the 15 black PM2.0×7.0 screws ❷ that secure the base enclosure to the notebook.
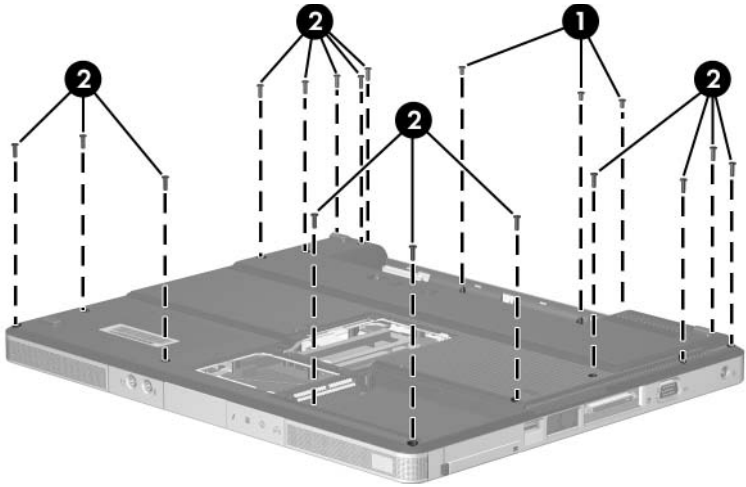
Removing the Base Enclosure Screws, Part 2,
Compaq Presario M2000 Models Only

✎ Steps 9 and 10 apply to both HP Pavilion ze2000 and Compaq Presario M2000 models.

9. Lift the rear edge of the base enclosure ❶ until it disengages from the notebook.

10. Slide the base enclosure back ❷ and remove it.
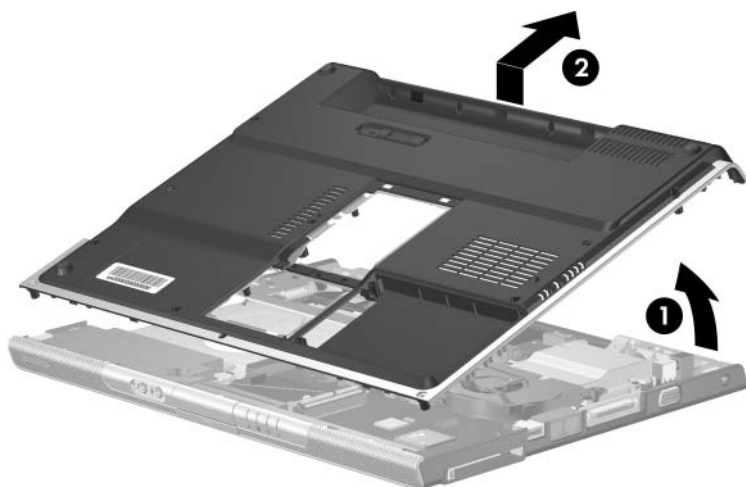
Removing the Base Enclosure

Reverse the above procedure to install the base enclosure.

5.13 Speaker Assembly

Speaker Assembly Spare Part Number Information

For use on HP Pavilion ze2000 models	382410-001
For use on Compaq Presario M2000 models	383189-001

1. Prepare the notebook for disassembly (Section 5.3) and remove the following components:

   a. Optical drive (Section 5.5)

   b. Memory module compartment cover (Section 5.6)

   c. Mini PCI compartment cover (Section 5.7)

   d. Keyboard cover (Section 5.8)

   e. Keyboard (Section 5.10)

   f. Display assembly (Section 5.11)

   g. Base enclosure (Section 5.12)

2. Disconnect the speaker cable ❶ from the system board.

3. Lift the speaker straight up to remove it ❷ from the top cover.
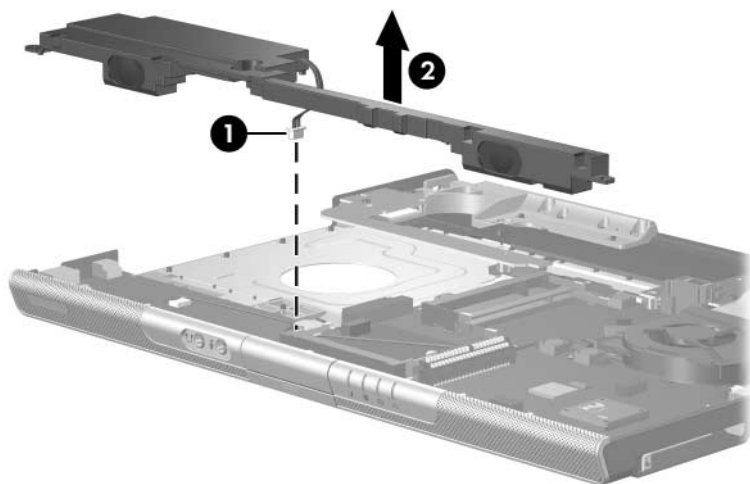
Removing the Speaker Assembly

Reverse the above procedure to install the speaker assembly.

5.14 Heat Sink

Heat Sink Spare Part Number Information

Heat sink (includes thermal pad)	382412-001

1. Prepare the notebook for disassembly (Section 5.3) and remove the following components:

   a. Optical drive (Section 5.5)

   b. Memory module compartment cover (Section 5.6)

   c. Mini PCI compartment cover (Section 5.7)

   d. Keyboard cover (Section 5.8)

   e. Keyboard (Section 5.10)

   f. Display assembly (Section 5.11)

   g. Base enclosure (Section 5.12)

2. Turn the notebook upside down with the front panel toward you.

3. Disconnect the fan cable ❶ from the system board.

4. Remove the 3 silver PM2.0×4.0 screws ❷ that secure the heat sink to the top cover.

5. Remove the heat sink ❸.
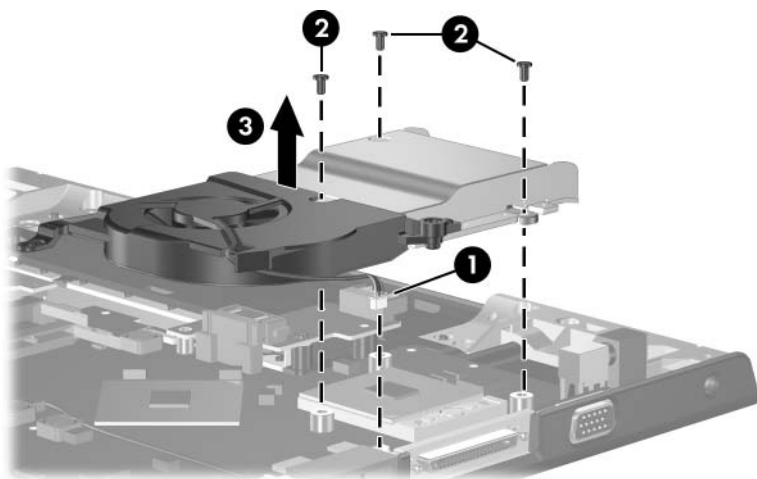
Removing the Heat Sink

Reverse the above procedure to install the heat sink.

5.15 Fan

Fan Spare Part Number Information

Fan (includes thermal pad)	382411-001

1. Prepare the notebook for disassembly (Section 5.3) and remove the following components:

   a. Optical drive (Section 5.5)

   b. Memory module compartment cover (Section 5.6)

   c. Mini PCI compartment cover (Section 5.7)

   d. Keyboard cover (Section 5.8)

   e. Keyboard (Section 5.10)

   f. Display assembly (Section 5.11)

   g. Base enclosure (Section 5.12)

   h. Heat sink (Section 5.14)

2. Turn the heat sink upside down with the front panel toward you.

3. Remove the 2 silver PM2.0×4.0 screws ❶ that secure the fan to the heat sink.

4. Remove the fan ❷.
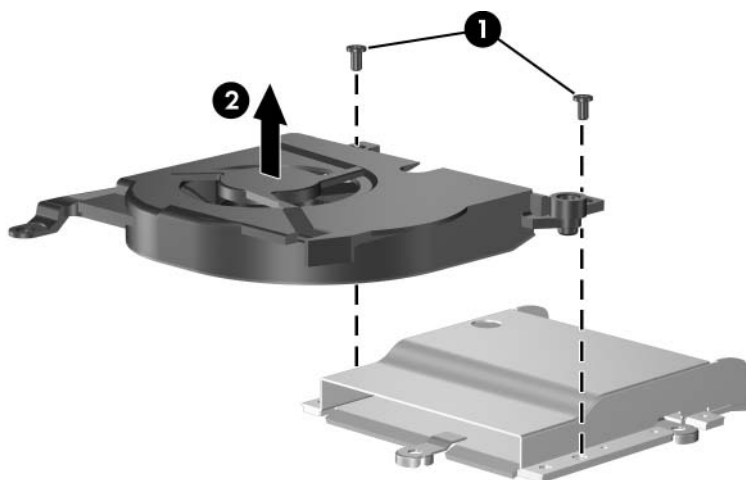
Removing the Fan

Reverse the above procedure to install the fan.

5.16 Processor

Processor Spare Part Number Information

Intel Pentium M 745 (1.8-GHz) with 400-MHz FSB	373053-001
Intel Pentium M 735 (1.7-GHz) with 400-MHz FSB	373052-001
Intel Pentium M 725 (1.6-GHz) with 400-MHz FSB	367771-001
Intel Pentium M 715A (1.5-GHz) with 400-MHz FSB	380690-001
Intel Celeron M 360 (1.4-GHz) with 400-MHz FSB	380033-001
Intel Celeron M 350 (1.3-GHz) with 400-MHz FSB	380032-001

1. Prepare the notebook for disassembly (Section 5.3) and remove the following components:

   a. Optical drive (Section 5.5)

   b. Memory module compartment cover (Section 5.6)

   c. Mini PCI compartment cover (Section 5.7)

   d. Keyboard cover (Section 5.8)

   e. Keyboard (Section 5.10)

   f. Display assembly (Section 5.11)

   g. Base enclosure (Section 5.12)

   h. Heat sink (Section 5.14)

2. Turn the processor locking screw ❶ one-quarter turn counterclockwise until you feel a click.

3. Lift the processor ❷ straight up and remove it.

✎ Note that the gold triangle ❸ on the processor should be aligned in the front right corner when you install the processor.
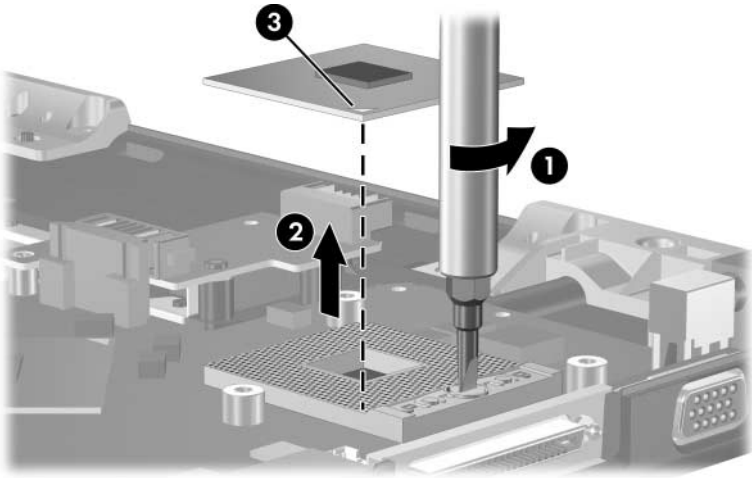
Removing the Processor

Reverse the above procedure to install a processor.

5.17 Battery Connector Board

Battery Connector Board Spare Part Number Information

Battery connector board	382413-001

1. Prepare the notebook for disassembly (Section 5.3) and remove the following components:

   a. Optical drive (Section 5.5)

   b. Memory module compartment cover (Section 5.6)

   c. Mini PCI compartment cover (Section 5.7)

   d. Keyboard cover (Section 5.8)

   e. Keyboard (Section 5.10)

   f. Display assembly (Section 5.11)

   g. Base enclosure (Section 5.12)

2. Turn the top cover top side up with the front panel toward you.

3. Remove the silver PM2.0×4.0 screw that secures the battery connector board to the top cover.
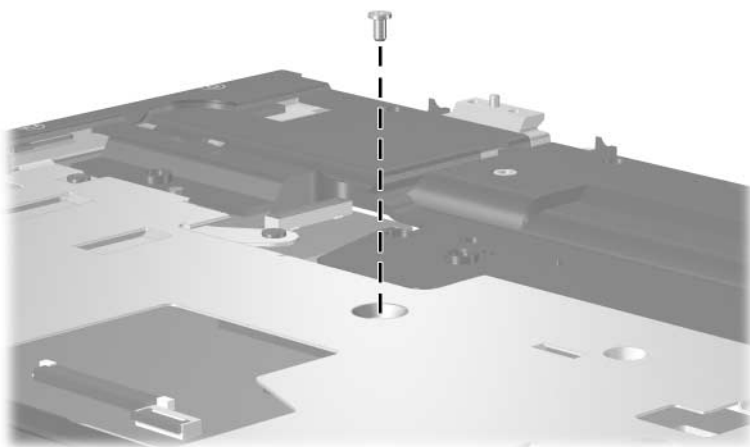
Removing the Battery Connector Board Screw

4. Turn the top cover bottom side up with the front panel toward you.

5. Remove the silver PM2.0×4.0 screw ❶ that secures the battery connector board to the top cover.

6. Slide the battery connector board toward the rear panel ❷ until it disconnects from the system board.

7. Remove the battery connector board ❸.
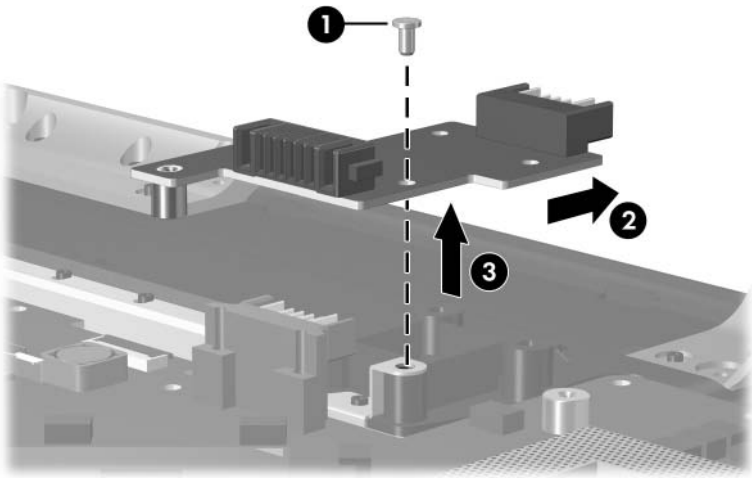
Removing the Battery Connector Board

Reverse the above procedure to install the the battery connector board.

5.18 Power Connector Board

Power Connector Board Spare Part Number Information

Power connector board	382414-001

1. Prepare the notebook for disassembly (Section 5.3) and remove the following components:

   a. Optical drive (Section 5.5)

   b. Memory module compartment cover (Section 5.6)

   c. Mini PCI compartment cover (Section 5.7)

   d. Keyboard cover (Section 5.8)

   e. Keyboard (Section 5.10)

   f. Display assembly (Section 5.11)

   g. Base enclosure (Section 5.12)

2. Remove the 2 silver PM2.0×4.0 screws ❶ that secure the power connector board to the top cover.

3. Slide the power connector board toward the rear panel ❷ until it disconnects it from the system board.

4. Remove the power connector board ❸.
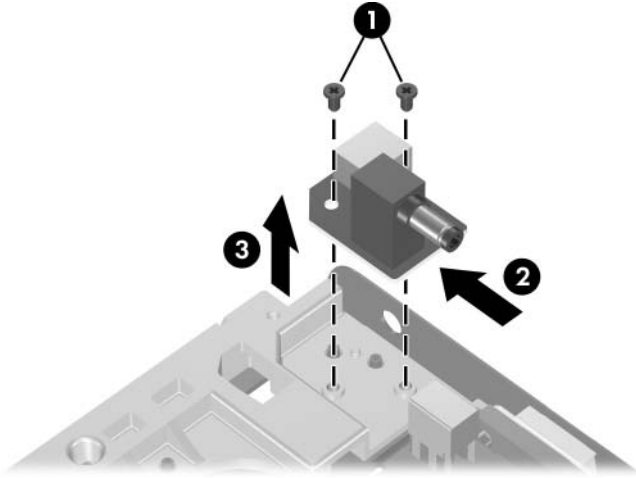
Removing the Power Connector Board

Reverse the above procedure to install the power connector board.

5.19 USB/S-Video Controller Board

✎ This section applies only to full-featured models.

USB/S-Video Controller Board

Spare Part Number Information

USB/S-Video controller board	382416-001

1. Prepare the notebook for disassembly (Section 5.3) and remove the following components:

   a. Optical drive (Section 5.5)

   b. Memory module compartment cover (Section 5.6)

   c. Mini PCI compartment cover (Section 5.7)

   d. Keyboard cover (Section 5.8)

   e. Keyboard (Section 5.10)

   f. Display assembly (Section 5.11)

   g. Base enclosure (Section 5.12)

2. Remove the 2 silver PM2.0×4.0 screws ❶ that secure the USB/S-Video controller board to the top cover.

3. Lift up on the right side of the board ❷ to disconnect it from the system board.

4. Remove the USB/S-Video controller board.
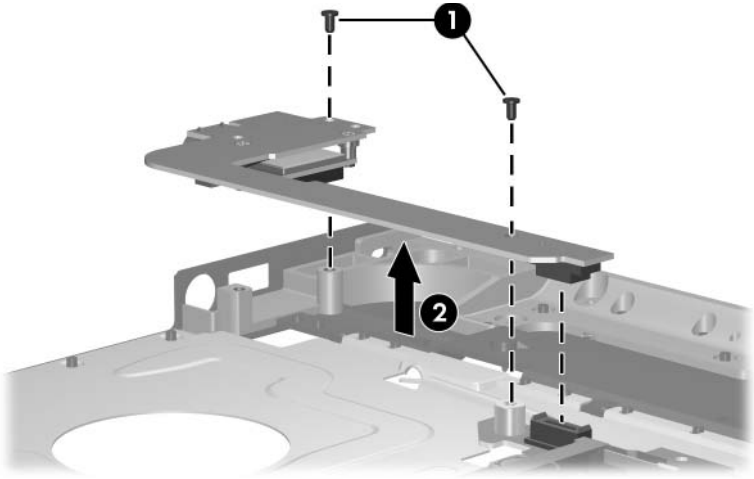
Removing the USB/S-Video Controller Board

Reverse the above procedure to install the USB/S-Video controller board.

5.20 Bluetooth Board

✎ This section applies only to full-featured models.

Bluetooth Board Spare Part Number Information

Broadcomm Bluetooth board	376651-001

1. Prepare the notebook for disassembly (Section 5.3) and remove the following components:

   a. Optical drive (Section 5.5)

   b. Memory module compartment cover (Section 5.6)

   c. Mini PCI compartment cover (Section 5.7)

   d. Keyboard cover (Section 5.8)

   e. Keyboard (Section 5.10)

   f. Display assembly (Section 5.11)

   g. Base enclosure (Section 5.12)

2. Turn the USB/S-Video controller board upside down with the USB connector away from you.

3. Remove the 2 PM1.5×3.5 screws ❶ that secure the Bluetooth board to the USB/S-Video controller board.

4. Disconnect the Bluetooth board cable ❷ from the USB/S-Video controller board.

5. Remove the Bluetooth board ❸.
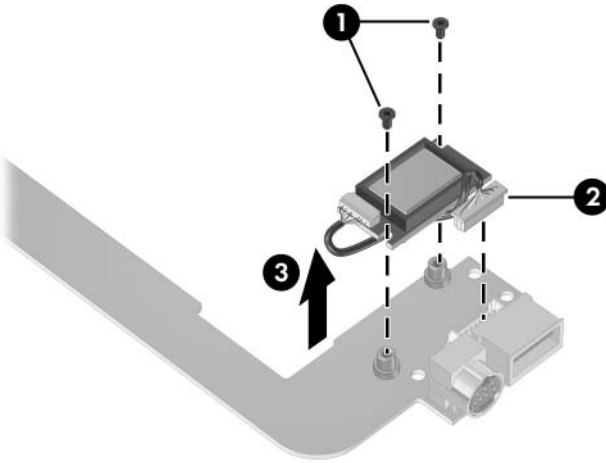
Removing the Bluetooth Board

Reverse the above procedure to install the Bluetooth board.

5.21 System Board

System Board Spare Part Number Information

For use on models with full-featured models (includes a disk cell RTC battery) 381062-001

For use on models with defeatured models (includes a disk cell RTC battery) 381061-001

✎ All system board spares kits include a disk cell RTC battery.

✎ When replacing the system board, ensure that the following components are removed from the defective system board and installed on the replacement system board:

- Memory modules (Section 5.6)
- Mini PCI communications card (Section 5.7)
- Heat sink (Section 5.14)
- Processor (Section 5.16)

1. Prepare the notebook for disassembly (Section 5.3) and remove the following components:

   a. Optical drive (Section 5.5)

   b. Keyboard cover (Section 5.8)

   c. Keyboard (Section 5.10)

   d. Display assembly (Section 5.11)

   e. Base enclosure (Section 5.12)

   f. Speaker assembly (Section 5.13)

   g. Battery connector board (Section 5.17)

   h. Power connector board (Section 5.18)

   i. USB/S-Video controller board (Section 5.19)

2. Turn the top cover right side up with the front panel toward you.

3. Release the ZIF connector ❶ to which the TouchPad cable is connected and disconnect the cable ❷ from the system board.
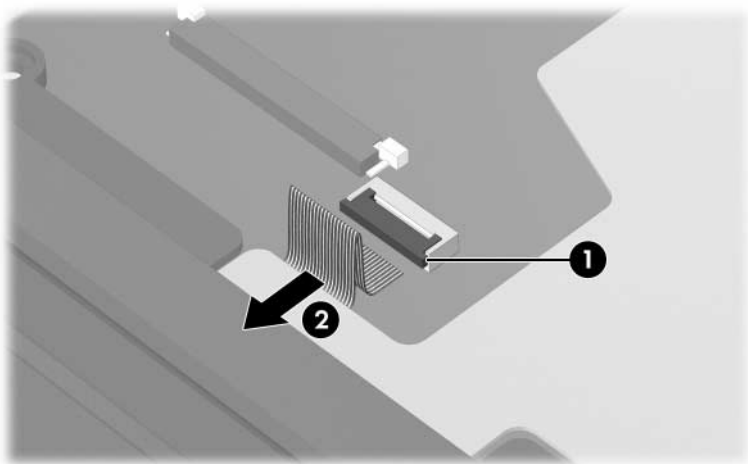
Disconnecting the TouchPad Cable

4. Turn the top cover upside down with the front toward you.

✎ Step 6 applies only to HP Pavilion ze2000 models. See step 7 in this section for information on removing the system board screws on Compaq Presario M2000 models.

5. Remove the 2 silver PM2.0×4.0 screws that secure the system board to the top cover.
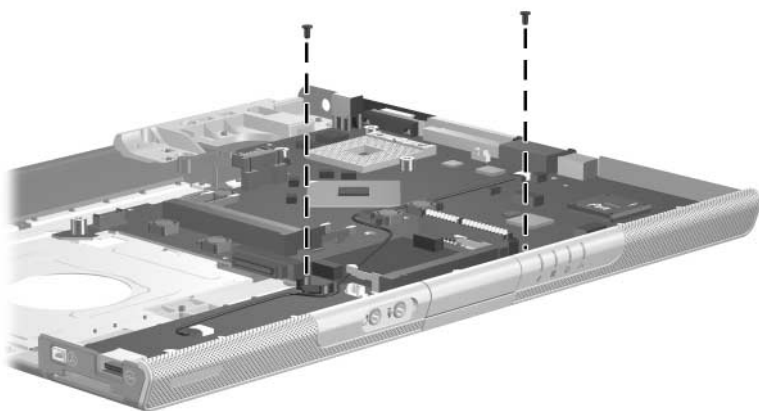
Removing the System Board Screws, HP ze2000 Models Only

✎ Step 7 applies only to Compaq Presario M2000 models.

6. Remove the 3 silver PM2.0×4.0 screws that secure the system board to the top cover.
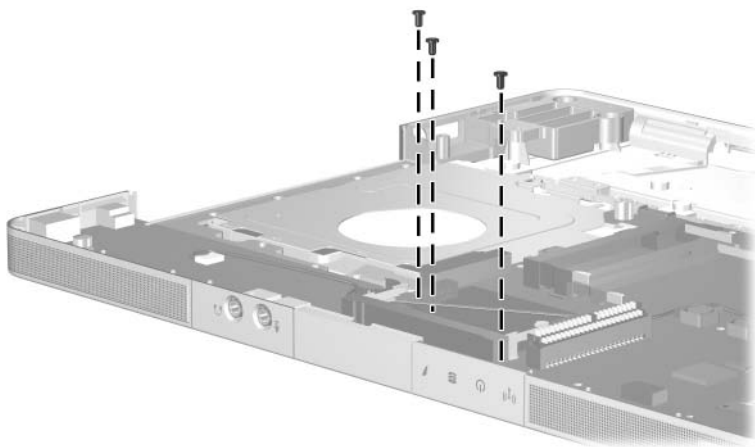
Removing the System Board Screws, Part 2,
Compaq Presario M2000 Models Only

7. Flex the left edge of the top cover out ❶ until the 1394 connector ❷ disengages from the top cover.

8. Lift the left side of the system board ❸ until the 1394 connector is clear.

9. Flex the front edge of the top cover ❹ until the audio connectors ❺ and LED section ❻ of the system board disengage from the top cover.
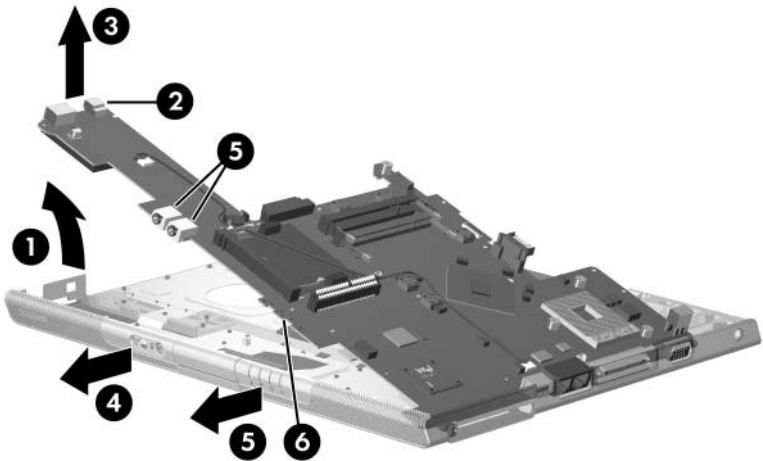
Releasing the System Board

10. Slide the system board to the left at an angle and remove it.
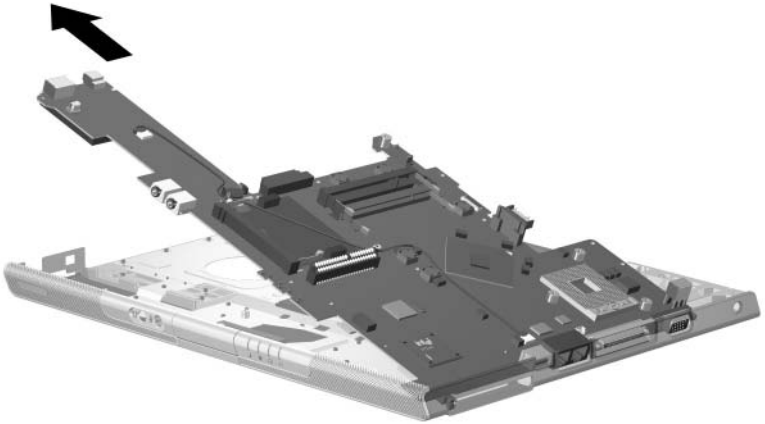
Removing the System Board

Reverse the above procedure to install the system board.

6

Specifications

This chapter provides physical and performance specifications.

Table 6-1

Notebook

Dimensions

HP Pavilion ze2000

Height (varies from front to back)	3.01 cm to 3.86 cm	1.19 in to 1.52 in
Width	23.46 cm	9.24 in
Depth	33.40 cm	13.15 in

Compaq Presario M2000

Height (varies from front to back)	3.29 cm to 3.89 cm	1.30 in to 1.53 in
Width	23.06 cm	9.08 in
Depth	33.40 cm	13.15 in

Weight (varies by configuration)

HP Pavilion ze2000	2.44 kg	5.38 lb
Compaq Presario M2000	2.39 kg	5.26 lb

Stand-alone power requirements

Operating voltage	18.5V dc @ 3.5 A - 65 W
Operating current	3.5 A

Table 6-1

Notebook *(Continued)*

Temperature		
Operating	10°C to 35°C	50°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%, 38.7°C (101.6°F) maximum wet bulb temperature	
Maximum altitude (unpressurized)		
Operating (14.7 to 10.1 psia)	-15 m to 3,048 m	-50 ft to 10,000 ft
Nonoperating (14.7 to 4.4 psia)	-15 m to 12,192 m	-50 ft to 40,000 ft
Shock		
Operating	125 g, 2 ms, half-sine	
Nonoperating	200 g, 2 ms, half-sine	
Random Vibration		
Operating	0.75 g zero-to-peak, 10 Hz to 500 Hz, 0.25 oct/min sweep rate	
Nonoperating	1.50 g zero-to-peak, 10 Hz to 500 Hz, 0.5 oct/min sweep rate	

✎ Applicable product safety standards specify thermal limits for plastic surfaces. The notebook operates well within this range of temperatures.

Table 6-2

15.0-inch, XGA, Display

Dimensions		
Height	22.9 cm	9.0 in
Width	30.0 cm	11.8 in
Diagonal	38.1 cm	15.0 in

Number of colors	Up to 16.8 million
Contrast ratio	250:1
Brightness	150 nits typical

Pixel resolution	
Pitch	0.264 × 0.264 mm
Format	1024 × 768
Configuration	RGB vertical stripe

Backlight	Edge lit
Character display	80 × 25
Total power consumption	5.5 W
Viewing angle	+/-35° horizontal, +15/-35° vertical typical

Table 6-3

Hard Drives

	80-GB*	60-GB*	40-GB*
Dimensions			
Height	9.5 mm	9.5 mm	9.5 mm
Width	70 mm	70 mm	70 mm
Weight	99 g	102 g	99 g
Interface type	ATA-5	ATA-5	ATA-5
Transfer rate			
Synchronous (maximum)	100 MB/sec	100 MB/sec	100 MB/sec
Security	ATA security	ATA security	ATA security
Seek times (typical read, including setting)			
Single track	3 ms	3 ms	3 ms
Average	13 ms	13 ms	13 ms
Maximum	24 ms	24 ms	24 ms
Logical blocks[†]	156,301,488	117,210,240	78,140,160
Disk rotational speed	4200 rpm	4200 rpm	4200 rpm
Operating temperature	5°C to 55°C (41°F to 131°F)		

✎ Certain restrictions and exclusions apply. Consult Customer Care for details.

*1 GB = 1 billion bytes when referring to hard drive storage capacity. Actual capacity is less.
[†]Actual drive specifications may differ slightly.

Table 6-4

Primary 6-cell, Li-Ion Battery Pack

Dimensions		
Height	2.00 cm	0.79 in
Width	9.40 cm	3.70 in
Depth	13.40 cm	5.28 in
Weight	0.34 kg	0.75 lb
Energy		
Voltage	11.1 V	
Amp-hour capacity	4.4 Ah	
Watt-hour capacity	48 Wh	
Temperature		
Operating	5°C to 45°C	41°F to 113°F
Nonoperating	0°C to 60°C	32°F to 140°F

Table 6-5

24X DVD/CD-RW Combo Drive

Applicable disk	Read:	Write:
	DVD-R, DVD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18),	CD-R and CD-RW
	CD-ROM (Mode 1 and 2)	
	CD Digital Audio	
	CD-XA ready (Mode 2, Form 1 and 2)	
	CD-I ready (Mode 2, Form 1 and 2)	
	CD-R, CD-RW	
	Photo CD (single and multisession)	
	CD-Bridge	
Center hole diameter	1.5 cm (0.59 in)	
Disk diameter		
Standard disc	12 cm (4.72 in)	
Mini disc	8 cm (3.15 in)	

Table 6-5

24X DVD/CD-RW Combo Drive *(Continued)*

Disk thickness	1.2 mm (0.047 in)	
Track pitch	0.74 µm	
Access time	CD media	DVD media
Random	< 110 ms	< 130 ms
Full stroke	< 210 ms	< 225 ms
Audio output level	Line-out, 0.7 V rms	
Cache buffer	2 MB	
Data transfer rate		
CD-R (24X)	3600 KB/s (150 KB/s at 1X CD rate)	
CD-RW (10X)	1500 KB/s (150 KB/s at 1X CD rate)	
CD-ROM (24X)	3600 KB/s (150 KB/s at 1X CD rate)	
DVD (8X)	10,800 KB/s (1352 KB/s at 1X DVD rate)	
Multiword DMA mode 2	16.6 MB/s	
Startup time	< 15 seconds	
Stop time	< 6 seconds	

Table 6-6

8X DVD±RW/R and CD-RW Combo Drive

Applicable disk	Read: DVD-R, DVD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), CD-ROM (Mode 1 and 2) CD Digital Audio CD-XA ready (Mode 2, Form 1 and 2) CD-I ready (Mode 2, Form 1 and 2) CD-R, CD-RW Photo CD (single and multisession) CD-Bridge	Write: CD-R and CD-RW DVD-R and DVD-RW
Center hole diameter	1.5 cm (0.59 in)	
Disk diameter		
Standard disc	12 cm (4.72 in)	
Mini disc	8 cm (3.15 in)	

Table 6-6

8X DVD±RW/R and CD-RW Combo Drive *(Continued)*

Disk thickness	1.2 mm (0.047 in)	
Track pitch	0.74 µm	
Access time	CD	DVD
Random	< 175 ms	< 230 ms
Full stroke	< 285 ms	< 335 ms
Audio output level	Audio-out, 0.7 Vrms	
Cache buffer	2 MB	
Data transfer rate		
CD-R (16X)	2,400 KB/s (150 KB/s at 1X CD rate)	
CD-RW (8X)	1,200 KB/s (150 KB/s at 1X CD rate)	
CD-ROM (24X)	3,600 KB/s (150 KB/s at 1X CD rate)	
DVD (8X)	10,800 KB/s (1,352 KB/s at 1X DVD rate)	
DVD-R (4X)	5,400 KB/s (1,352 KB/s at 1X DVD rate)	
DVD-RW (2X)	2,700 KB/s (1,352 KB/s at 1X DVD rate)	
Multiword DMA mode 2	16.6 MB/s	
Startup time	< 15 seconds	
Stop time	< 6 seconds	

Table 6-7

8X DVD-ROM Drive

Applicable disk	DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18)
	CD-ROM (Mode 1 and 2)
	CD Digital Audio
	CD-XA ready (Mode 2, Form 1 and 2)
	CD-I ready (Mode 2, Form 1 and 2)
	CD-R
	CD-RW
	Photo CD (single and multisession)
	CD-Bridge
Center hole diameter	1.5 cm (0.59 in)
Disk diameter	
Standard disc	12 cm (4.72 in)
Mini disc	8 cm (3.15 in)
Disk thickness	1.2 mm (0.047 in)

Table 6-7

8X DVD-ROM Drive *(Continued)*

Track pitch	0.74 µm	
Access time	CD media	DVD media
Random	< 100 ms	< 125 ms
Full stroke	< 175 ms	< 225 ms
Audio output level	Line-out, 0.7 V rms	
Cache buffer	512 KB	
Data transfer rate		
CD-R (24X)	3600 KB/s (150 KB/s at 1X CD rate)	
CD-RW (10X)	1500 KB/s (150 KB/s at 1X CD rate)	
CD-ROM (24X)	3600 KB/s (150 KB/s at 1X CD rate)	
DVD (8X)	10,800 KB/s (1352 KB/s at 1X DVD rate)	
Multiword DMA mode 2	16.6 MB/s	
Startup time	< 10 seconds	
Stop time	< 3 seconds	

Table 6-8

24X CD-ROM Drive

Applicable disk	Applicable disc CD-ROM (Mode 1 and 2)	
	CD Digital Audio	
	CD-XA ready (Mode 2, Form 1 and 2)	
	CD-I ready (Mode 2, Form 1 and 2)	
	CD-R	
	CD-RW	
	Photo CD (single/multisession)	
	CD-Bridge	
Center hole diameter	1.5 cm (0.59 in)	
Disk diameter		
Standard disc	12 cm (4.72 in)	
Mini disc	8 cm (3.15 in)	
Disk thickness	1.2 mm (0.047 in)	
Track pitch	1.6 µm	
Access time	CD media	DVD media
Random	< 110 ms	< 125 ms
Full stroke	< 220 ms	< 225 ms
Audio output level	Line-out, 0.7 V rms	
Cache buffer	128 KB/s	
Data transfer rate		
CD-R (24X)	3600 KB/s (150 KB/s at 1X CD rate)	
Multiword DMA mode 2	16.6 MB/s	
Startup time	< 8 seconds	
Stop time	< 4 seconds	

Table 6-9

System DMA

Hardware DMA	System Function
DMA0	n/a
DMA1*	n/a
DMA2*	n/a
DMA3	n/a
DMA4	Direct memory access controller
DMA5*	Available for PC Card
DMA6	Not assigned
DMA7	Not assigned
*PC Card controller can use DMA 1, 2, or 5.	

Table 6-10

System Interrupts

Hardware IRQ	System Function
IRQ0	System timer
IRQ1	Standard 101-/102-Key or Microsoft Natural Keyboard
IRQ2	Cascaded
IRQ3	Intel 82801DB/DBM USB2 Enhanced Host Controller—24CD
IRQ4	COM1
IRQ5*	Conexant AC—Link Audio
	Intel 82801DB/DBM SMBus Controller—24C3
	Data Fax Modem with SmartCP
IRQ6	Diskette drive

Table 6-10

System Interrupts *(Continued)*

IRQ7*	Parallel port
IRQ8	System CMOS/real time clock
IRQ9*	Microsoft ACPI-compliant system
IRQ10*	Intel USB UHCI controller—24C2 Intel 82852/82855 GM/GME Graphic Controller Realtek RTL8139 Family PCI fast Ethernet Controller
IRQ11	Intel USB EHCI controller—24CD Intel USB UHCI controller—24C4 Intel USB UHCI controller—24C7 Intel Pro/Wireless 2200BG TI OHCI 1394 host controller TI PCI1410 cardbus controller
IRQ12	Synaptics PS/2 touch pad
IRQ13	Numeric data processor
IRQ14	Primary IDE channel
IRQ15	Secondary IDE channel

*Default configuration; audio possible configurations are IRQ5, IRQ7, IRQ9, IRQ10, or none.

✎ PC Cards may assert IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, or IRQ15. Either the infrared or the serial port may assert IRQ3 or IRQ4.

Table 6-11

System I/O Addresses

I/O Address (hex)	System Function (shipping configuration)
000 - 00F	DMA controller no. 1
010 - 01F	Unused
020 - 021	Interrupt controller no. 1
022 - 024	Opti chipset configuration registers
025 - 03F	Unused
02E - 02F	87334 "Super I/O" configuration for CPU
040 - 05F	Counter/timer registers
044 - 05F	Unused
060	Keyboard controller
061	Port B
062 - 063	Unused
064	Keyboard controller
065 - 06F	Unused
070 - 071	NMI enable/RTC
072 - 07F	Unused
080 - 08F	DMA page registers
090 - 091	Unused
092	Port A
093 - 09F	Unused
0A0 - 0A1	Interrupt controller no. 2

Table 6-11

System I/O Addresses *(Continued)*

I/O Address (hex)	System Function (shipping configuration)
0A2 - 0BF	Unused
0C0 - 0DF	DMA controller no. 2
0E0 - 0EF	Unused
0F0 - 0F1	Coprocessor busy clear/reset
0F2 - 0FF	Unused
100 - 16F	Unused
170 - 177	Secondary fixed disk controller
178 - 1EF	Unused
1F0 - 1F7	Primary fixed disk controller
1F8 - 200	Unused
201	Joystick (decoded in ESS1688)
202 - 21F	Unused
220 - 22F	Entertainment audio
230 - 26D	Unused
26E - 26	Unused
278 - 27F	Unused
280 - 2AB	Unused
2A0 - 2A7	Unused
2A8 - 2E7	Unused
2E8 - 2EF	Reserved serial port

Table 6-11

System I/O Addresses *(Continued)*

I/O Address (hex)	System Function (shipping configuration)
2F0 - 2F7	Unused
2F8 - 2FF	Infrared port
300 - 31F	Unused
320 - 36F	Unused
370 - 377	Secondary diskette drive controller
378 - 37F	Parallel port (LPT1/default)
380 - 387	Unused
388 - 38B	FM synthesizer—OPL3
38C - 3AF	Unused
3B0 - 3BB	VGA
3BC - 3BF	Reserved (parallel port/no EPP support)
3C0 - 3DF	VGA
3E0 - 3E1	PC Card controller in CPU
3E2 - 3E3	Unused
3E8 - 3EF	Internal modem
3F0 - 3F7	"A" diskette controller
3F8 - 3FF	Serial port (COM1/default)
CF8 - CFB	PCI configuration index register (PCIDIVO-1)
CFC - CFF	PCI configuration data register (PCIDIVO-1)

Table 6-12

System Memory Map

Size	Memory Address	System Function
640 KB	00000000-0009FFFF	Base memory
128 KB	000A0000-000BFFFF	Video memory
48 KB	000C0000-000CBFFF	Video BIOS
160 KB	000C8000-000E7FFF	Unused
64 KB	000E8000-000FFFFF	System BIOS
15 MB	00100000-00FFFFFF	Extended memory
58 MB	01000000-047FFFFF	Super extended memory
58 MB	04800000-07FFFFFF	Unused
2 MB	08000000-080FFFFF	Video memory (direct access)
4 GB	08200000-FFFEFFFF	Unused
64 KB	FFFF0000-FFFFFFFF	System BIOS

A

Connector Pin Assignments

Table A-1

Universal Serial Bus
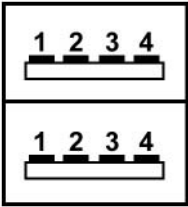
Pin	Signal	Pin	Signal
1	+5 VDC	3	Data +
2	Data –	4	Ground

Table A-2

RJ-45 (Network)
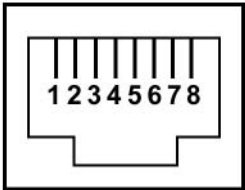
Pin	Signal	Pin	Signal
1	Transmit +	5	Unused
2	Transmit –	6	Receive –
3	Receive +	7	Unused
4	Unused	8	Unused

Table A-3

S-Video-Out
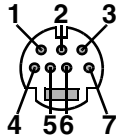
Pin	Signal	Pin	Signal
1	S-VHS color (C) signal	5	TV-CD
2	Composite video signal	6	S-VHS intensity ground
3	S-VHS intensity (Y) signal	7	Composite video ground
4	S-VHS color ground		

Table A-4

External Monitor
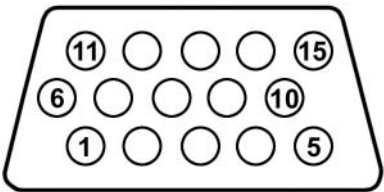
Pin	Signal	Pin	Signal
1	Red analog	9	+5 VDC
2	Green analog	10	Ground
3	Blue analog	11	Monitor detect
4	Not connected	12	DDC 2B data
5	Ground	13	Horizontal sync
6	Ground analog	14	Vertical sync
7	Ground analog	15	DDC 2B clock
8	Ground analog		

Table A-5

RJ-11 (Modem)
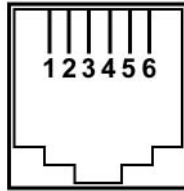
Pin	Signal	Pin	Signal
1	Unused	4	Unused
2	Tip	5	Unused
3	Ring	6	Unused

Table A-6

Audio-In (Microphone)
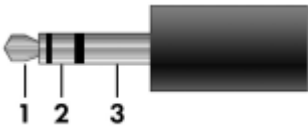
Pin	Signal	Pin	Signal
1	Audio signal in	3	Ground
2	Audio signal in		

Table A-7

Audio-Out (Headphone)
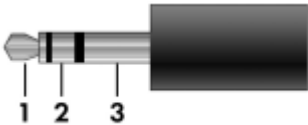
Pin	Signal	Pin	Signal
1	Audio out, left channel	3	Ground
2	Audio out, right channel		

B

Power Cord Set Requirements

3-Conductor Power Cord Set

The wide range input feature of the notebook permits it to operate from any line voltage from 100 to 120 or 220 to 240 volts AC.

The power cord set included with the notebook meets the requirements for use in the country where the equipment is purchased.

Power cord sets for use in other countries must meet the requirements of the country where the notebook is used.

General Requirements

The requirements listed below are applicable to all countries.

■ The length of the power cord set must be at least 1.5 m (5.0 ft) and a maximum of 2.0 m (6.5 ft).

■ All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.

■ The power cord sets must have a minimum current capacity of 10 amps and a nominal voltage rating of 125 or 250 V AC, as required by each country's power system.

■ The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the notebook.

Country-Specific Requirements

3-Conductor Power Cord Set Requirements

Country	Accredited Agency	Applicable Note Number
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	METI	3

✎ NOTES:

1. The flexible cord must be <HAR> Type HO5VV-F, 3-conductor, 1.0 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.

2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.

3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00 mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.

3-Conductor Power Cord Set Requirements *(Continued)*

Country	Accredited Agency	Applicable Note Number
The Netherlands	KEMA	1
Norway	NEMKO	1
Sweden	SEMKO	1
Switzerland	SEV	1
United Kingdom	BSI	1
United States	UL	2

✎ NOTES:

1. The flexible cord must be <HAR> Type HO5VV-F, 3-conductor, 1.0 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.

2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.

3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00 mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.

C

Screw Listing

This appendix provides specification and reference information for the screws used in the notebook. All screws listed in this appendix are available in the Miscellaneous Screw Kits, spare part numbers 382402-001 (for use on HP Pavilion ze2000 models) and 382403-001 (for use on Compaq Presario M2000 models).

Table C-1

Black PM2.0×5.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Black	5	5.0 mm	2.0 mm	4.0 mm
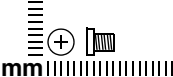
Where used:

❶ Two screws that secure the hard drive cover to the notebook (screws are captured on the cover by C clips; documented in Section 5.3)

❷ Two screws that secure the memory module compartment cover to the notebook (screws are captured on the cover by C clips; documented in Section 5.6)

❸ One screw that secures the Mini PCI compartment cover to the notebook (screw is captured on the cover by C clips; documented in Section 5.7)
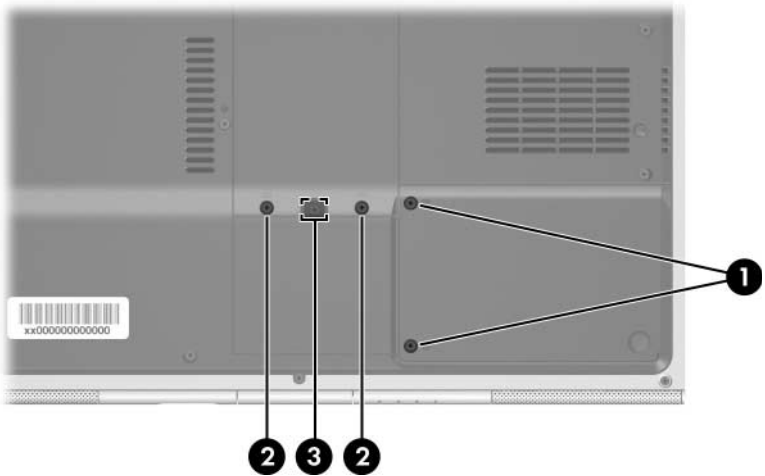
Black PM2.0×5.0 Screw Locations

Table C-2

Silver PM2.5×4.0 Screw

mm	Color	Qty.	Length	Thread	Head Width
	Silver	4	4.0 mm	2.5 mm	4.0 mm
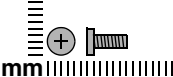
Where used:

4 screws that secure the hard drive frame to the hard drive (documented in Section 5.3)
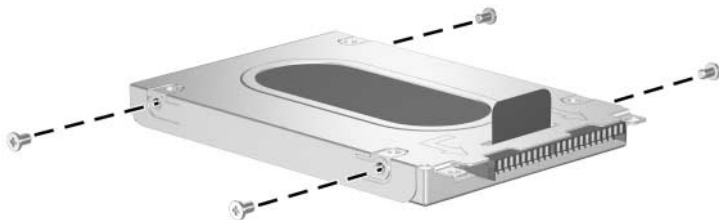
Silver PM2.5×4.0 Screw Locations

Table C-3

Black PM2.0×6.0 Screw

mm	Color	Qty.	Length	Thread	Head Width
	Black	22	6.0 mm	2.0 mm	4.0 mm
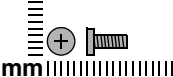
Where used:

❶ One screw that secures the optical drive to the notebook (documented in Section 5.5)

❷ Seven screws that secure the base enclosure on the HP Pavilion ze2000 notebook (documented in Section 5.12)
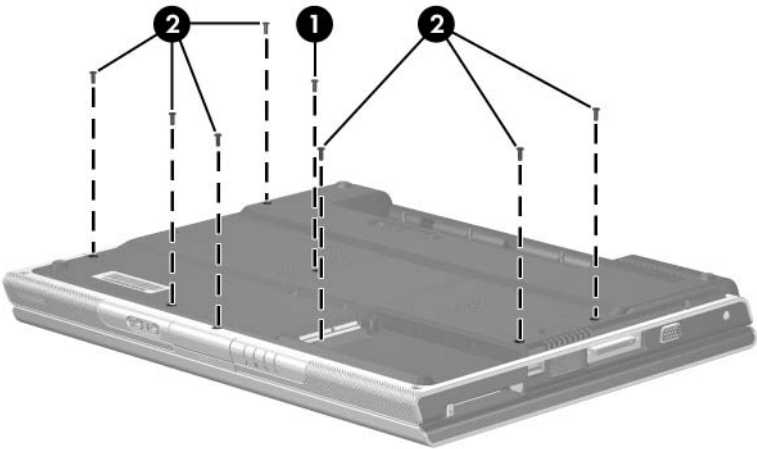
Black PM2.0×6.0 Screw Locations

Table C-3

Black PM2.0×6.0 Screw *(Continued)*

mm	Color	Qty.	Length	Thread	Head Width
	Black	22	6.0 mm	2.0 mm	4.0 mm
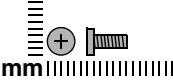
Where used:

❶ One screw that secures the keyboard to the notebook (documented in Section 5.10)

❷ Four screws that secure the display assembly on the HP Pavilion ze2000 notebook (documented in Section 5.11)
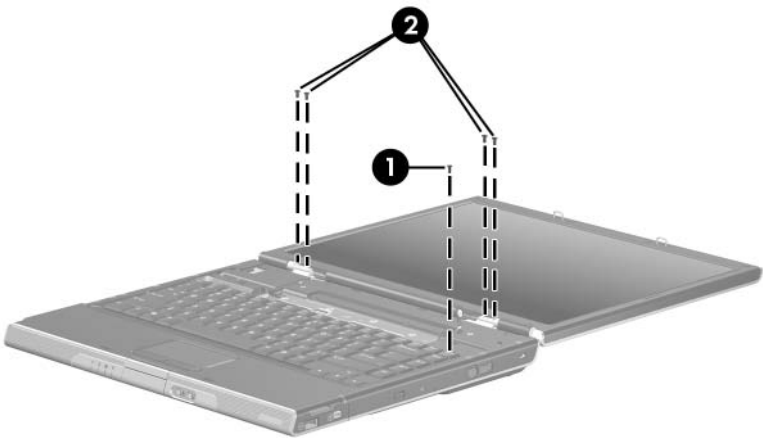
Black PM2.0×6.0 Screw Locations

Table C-3

Black PM2.0×6.0 Screw *(Continued)*

mm	Color	Qty.	Length	Thread	Head Width
	Black	22	6.0 mm	2.0 mm	4.0 mm
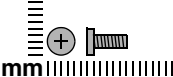
Where used:

6 screws that secure the display assembly on the Compaq Presario M2000 notebook (documented in Section 5.11)

Black PM2.0×6.0 Screw Locations

Table C-3

Black PM2.0×6.0 Screw *(Continued)*

mm	Color	Qty.	Length	Thread	Head Width
	Black	22	6.0 mm	2.0 mm	4.0 mm
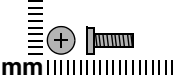
Where used:

3 screws that secure the base enclosure to the notebook (documented in Section 5.12)
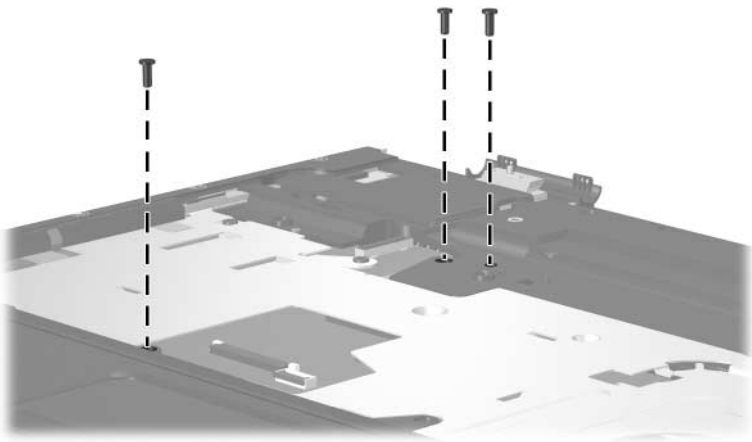
Black PM2.0×6.0 Screw Locations

Table C-4

Black PM2.0×7.0 Screw

mm	Color	Qty.	Length	Thread	Head Width
	Black	18	7.0 mm	2.0 mm	4.0 mm
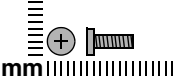
Where used:

1 screw that secures the optical drive on the Compaq Presario M2000 notebook (documented in Section 5.5)

Black PM2.0×7.0 Screw Locations

Table C-4

Black PM2.0×7.0 Screw *(Continued)*

mm	Color	Qty.	Length	Thread	Head Width
	Black	18	7.0 mm	2.0 mm	4.0 mm
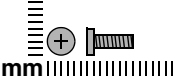
Where used:

2 screws that secure the base enclosure on the Compaq Presario M2000 notebook (documented in Section 5.12)
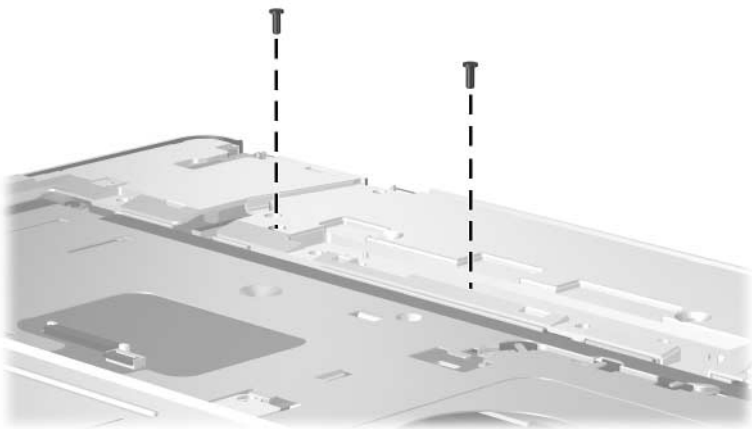
Black PM2.0×7.0 Screw Locations

Table C-4

Black PM2.0×7.0 Screw *(Continued)*

mm	Color	Qty.	Length	Thread	Head Width
	Black	18	7.0 mm	2.0 mm	4.0 mm
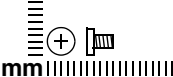
Where used:

15 screws that secure the base enclosure on the Compaq Presario M2000 notebook (documented in Section 5.12)

Black PM2.0×7.0 Screw Locations

Table C-5

Silver PM2.0×5.0 Screw

	Color	Qty.	Length	Thread	Head Width
mm	Silver	9	5.0 mm	2.0 mm	4.0 mm

Where used:

❶ Two screws that secure the keyboard cover to the notebook (documented in Section 5.10)

❷ Six screws that secure the base enclosure on the HP Pavilion ze2000 notebook (documented in Section 5.12)
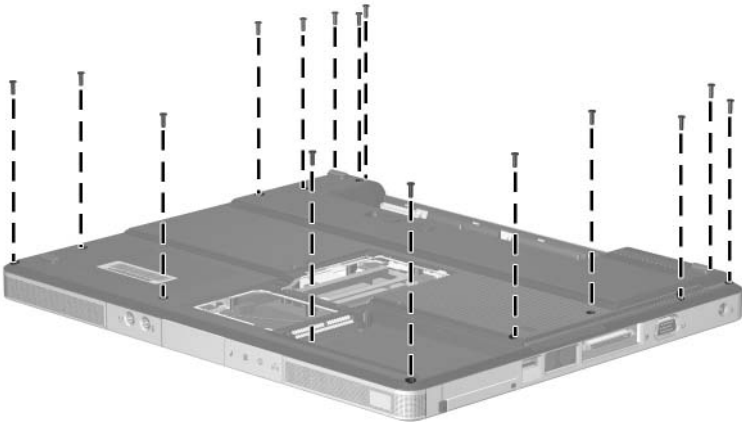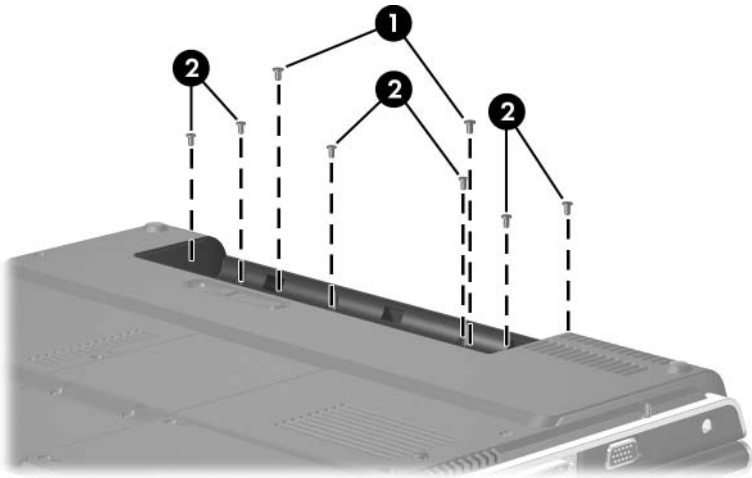
Silver PM2.0×5.0 Screw Locations

Table C-5

Silver PM2.0×5.0 Screw *(Continued)*

mm	Color	Qty.	Length	Thread	Head Width
	Silver	9	5.0 mm	2.0 mm	4.0 mm

Where used:

1 screw that secures the base enclosure to the notebook (documented in Section 5.12)
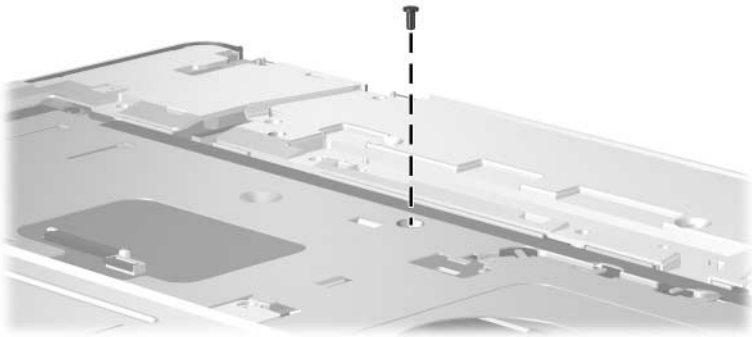
Silver PM2.0×5.0 Screw Locations

Table C-6

Silver PM2.0×3.0 Screw

mm	Color	Qty.	Length	Thread	Head Width
	Silver	2	3.0 mm	2.0 mm	4.0 mm
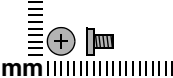
Where used:

2 screws that secure the LED board to the notebook (documented in Section 5.9)
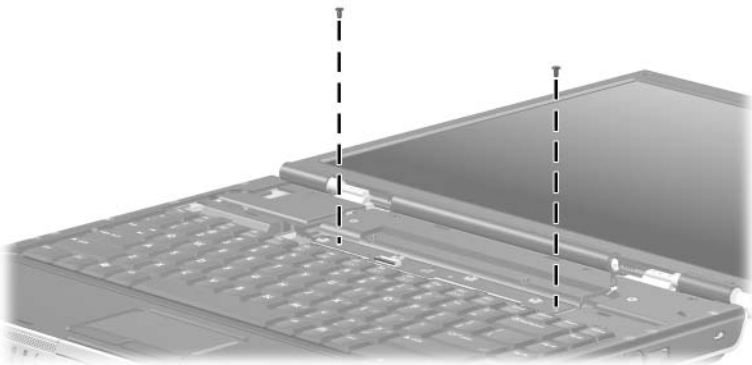
Silver PM2.0×3.0 Screw Locations

Table C-7

Black PM2.0×4.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Black	8	4.0 mm	2.0 mm	4.0 mm
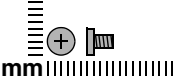
Where used:

3 screws that secure the keyboard to the notebook (documented in Section 5.10)

Black PM2.0×4.0 Screw Locations

Table C-7

Black PM2.0×4.0 Screw *(Continued)*

mm	Color	Qty.	Length	Thread	Head Width
	Black	8	4.0 mm	2.0 mm	4.0 mm
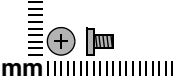
Where used:

2 screws that secure the base enclosure to the notebook (documented in Section 5.12)
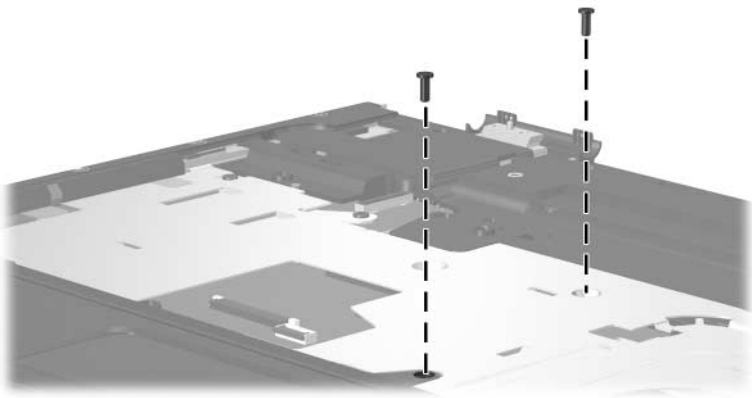
Black PM2.0×4.0 Screw Locations

Table C-7

Black PM2.0×4.0 Screw *(Continued)*

	Color	Qty.	Length	Thread	Head Width
mm	Black	8	4.0 mm	2.0 mm	4.0 mm
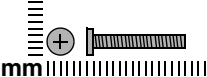
Where used:

3 screws that secure the base enclosure on the Compaq Presario M2000 notebook (documented in Section 5.12)

Black PM2.0×4.0 Screw Locations

Table C-8

Black PM2.0×16.0 Screw

mm	Color	Qty.	Length	Thread	Head Width
	Black	5	16.0 mm	2.0 mm	4.0 mm
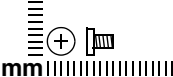
Where used:

5 screws that secure the base enclosure on the HP Pavilion ze2000 notebook (documented in Section 5.12)
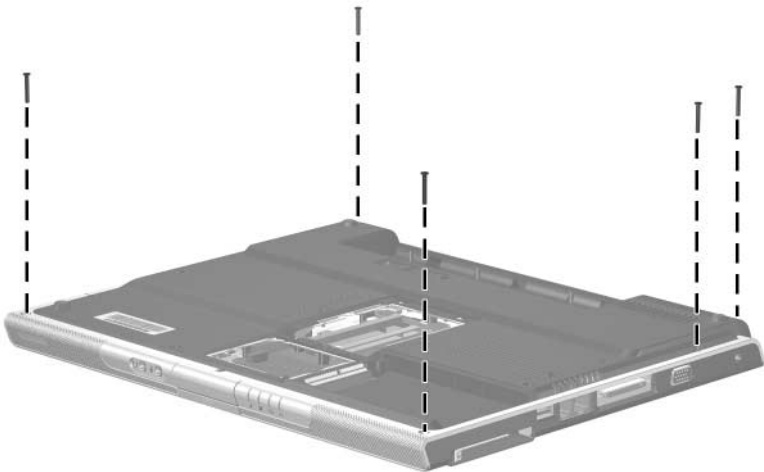
Black PM2.0×16.0 Screw Locations

Table C-9

Silver PM2.0×4.0 Screw

	Color	Qty.	Length	Thread	Head Width
mm	Silver	16	4.0 mm	2.0 mm	4.0 mm
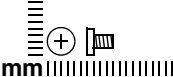
Where used:

❶ Three screws that secure the heat sink on the HP Pavilion ze2000 notebook (documented in Section 5.14)

❷ One screw that secures the battery connector board to the notebook (documented in Section 5.17)

❸ Two screws that secure the power connector board to the notebook (documented in Section 5.18)

❹ Two screws that secure the USB/S-Video controller board to the notebook (documented in Section 5.19)
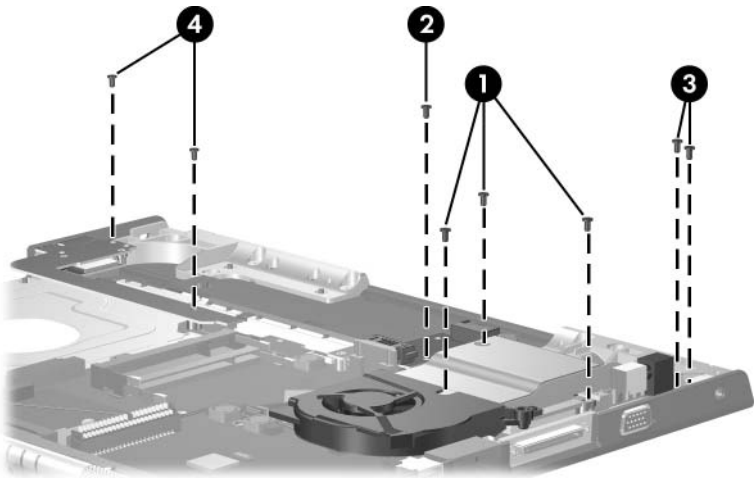
Silver PM2.0×4.0 Screw Locations

Table C-9

Silver PM2.0×4.0 Screw *(Continued)*

	Color	Qty.	Length	Thread	Head Width
mm	Silver	16	4.0 mm	2.0 mm	4.0 mm
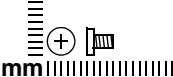
Where used:

2 screws that secure the fan to the heat sink (documented in Section 5.15)
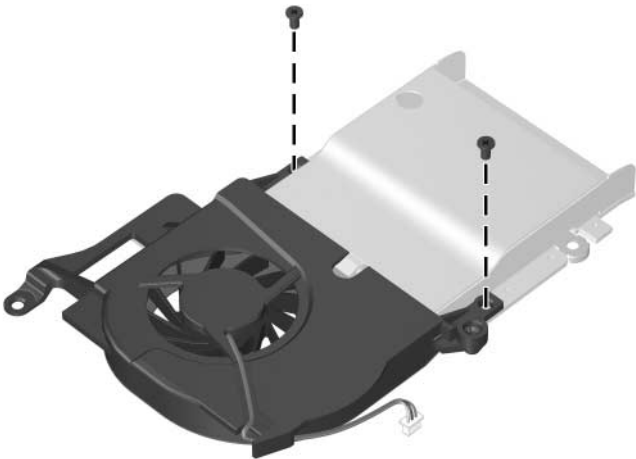
Silver PM2.0×4.0 Screw Locations

Table C-9

Silver PM2.0×4.0 Screw *(Continued)*

mm	Color	Qty.	Length	Thread	Head Width
	Silver	16	4.0 mm	2.0 mm	4.0 mm
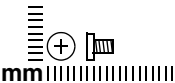
Where used:

1 screw that secures the battery connector board to notebook (documented in Section 5.17)
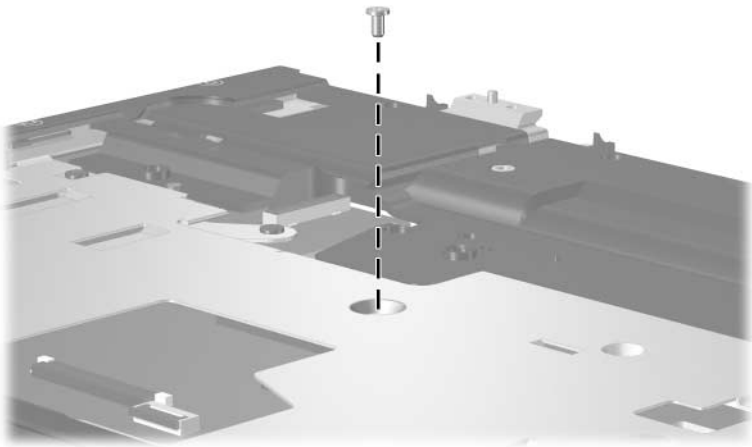
Silver PM2.0×4.0 Screw Locations

Table C-9

Silver PM2.0×4.0 Screw *(Continued)*

mm	Color	Qty.	Length	Thread	Head Width
	Silver	16	4.0 mm	2.0 mm	4.0 mm
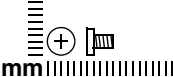
Where used:

2 screws that secure the system board on the HP Pavilion ze2000 notebook (documented in Section 5.21)
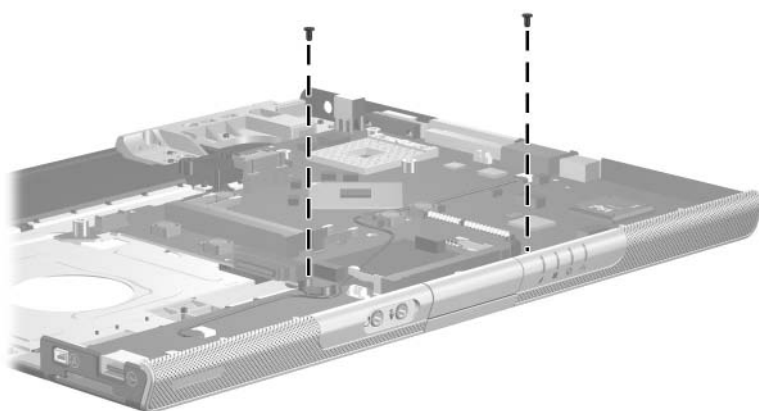
Silver PM2.0×4.0 Screw Locations

Table C-9

Silver PM2.0×4.0 Screw *(Continued)*

mm	Color	Qty.	Length	Thread	Head Width
	Silver	16	4.0 mm	2.0 mm	4.0 mm

Where used:

3 screws that secure the system board on the Compaq Presario M2000 notebook (documented in Section 5.21)
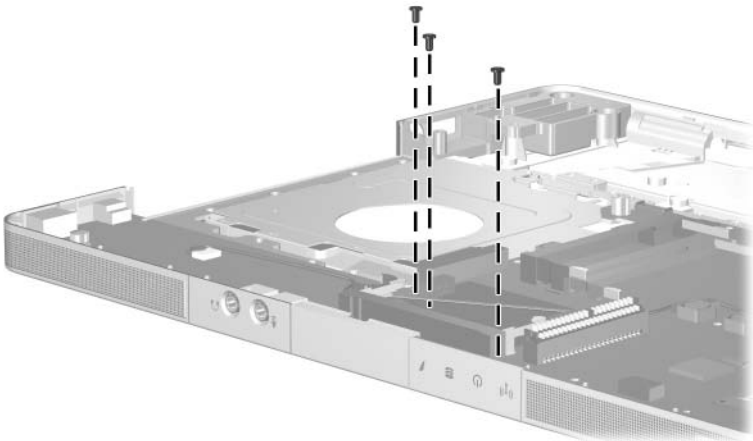
Silver PM2.0×4.0 Screw Locations

Table C-10

Phillips PM1.5×3.5 Screw

mm	Color	Qty.	Length	Thread	Head Width
	Silver	2	3.5 mm	1.5 mm	3.0 mm

Where used:

2 screws that secure the Bluetooth board to the notebook (documented in Section 5.20)
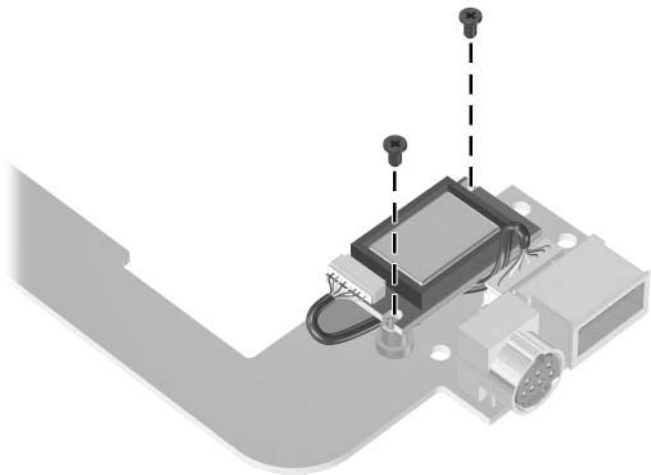
Silver PM1.5×3.5 Screw Locations

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